IRG

INTERNATIONAL REVIEW GROUP OF SOCIAL SCIENCE RESEARCH
ON POPULATION AND DEVELOPMENT

SOCIAL SCIENCE RESEARCH ON POPULATION AND DEVELOPMENT IN AFRICA SOUTH OF THE SAHARA

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Appendix 7

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PREFACE

The International Review Group of Social Science Research on Population and Development (IRG) was established in 1976 as an ad hoc, independent, autonomous body of eight members for the purpose of conducting a systematic, interdisciplinary evaluation of social science research related to population and development and recommending directions for future research and the development of research resources that will contribute to the formulation and improvement of population policies in developing countries

The IRG received financial support over a period of approximately two years from a broad-based group of governmental, inter-governmental, and non-governmental organizations composed of the Ford Foundation, the International Development Research Centre, the Norwegian Agency for International Development, the Population Council, the Rockefeller Foundation, the Swedish International Development Authority, the United Kingdom Ministry of Overseas Development, the United Nations Fund for Population Activities, and the World Bank The IRG's Secretariat was located at El Colegio de Mexico, Mexico City, an institution engaged in social science research on population and development

The IRG was presided over by Carmen A Miró Seven members were selected by the President on the basis of their expertise in a social science field related to population. Five members were chosen in particular for their knowledge of a specific region or sub-region of the developing world P B Desai, Middle South Asia, José Encarnación, Jr , South-East Asia, Akin L Mobogunje, Sub-Saharan Africa, Riad B. Tabbarah, South-West Asia and North African countries of the Arab League, and Raúl Urzúa, Latin America and the Caribbean Bernard Berelson and John C. Caldwell (who joined the Group in August 1977) prepared background papers of various kinds. Joseph E Potter served as Staff Associate in the IRG's Secretariat

The IRG accomplished its task of reviewing the state of social science knowledge on population and development and preparing its recommendations by means of several activities Four meetings of IRG members were convened between October 1976 and December 1978, a total of more than 60 papers were either commissioned from consultants or prepared by the members themselves, and, during 1978, three regional workshops on Research Priorities for Population Policy were held (in Colombo, Sri Lanka, Mexico City, and Nairobi, Kenya), to which were invited government officials responsible for important policy decisions bearing on population problems, well-known scholars in the population field, and personnel from donor agencies The major issues discussed and conclusions reached at each workshop were recorded by the IRG Secretariat and provided additional inputs that sharpened the focus of the Final Report

Among the papers prepared for the IRG, the basic background papers are seven reviews of the state of knowledge on population and development, major gaps therein, and possible ways of filling such gaps--one on each of the five regions (except Africa South of the Sahara, for which there are two) and the seventh based on the literature produced in developed countries In addition, papers were prepared on population policies and on the institutional research and training capacity of most of the regions These thirteen

documents, which are listed below, have been included as appendices to the Final Report Other commissioned documents on specific research topics of interest to the IRG sparked discussion at regional workshops and Group meetings The titles of these papers, most of which are intended for publication in specialized journals, are included in the List of Documents (see Appendix A to the Final Report)

APPENDICES TO THE FINAL REPORT

1 Social Science Research for Population Policy
Bernard Berelson

2 Social Science Research on Population and Development in Middle South Asia
P.B. Desai

3 Social Science Research on Population and Development in South-East and East Asia A Review and Search for Directions
Gavin W Jones

4 Population Policies and Their Implementation in South-East and East Asia
John C Caldwell and Pat Caldwell

5 Capacity for Social Science Research on Population and Development in South-East and East Asia· A Report on Institutional and Human Resources
East-West Population Institute

6 Population and Development in South-East Asia· A Fertility Model
José Encarnación, Jr.

7 Social Science Research on Population and Development in Africa South of the Sahara
Akin L Mabogunje and O. Arowolo

7A Population and Development in Africa South of the Sahara: A Review of the Literature, 1970-1978
Helen Ware

8 A Review of Population Policies in Africa South of the Sahara
Akin L. Mabogunje

9 Social Science Research on Population and Development in the Arab Countries
Riad B Tabbarah, Muhi A Mamish, and Youssef Gemayel

10 Population Research and Training Institutions in the Arab World
Allan G Hill

11 Social Science Research on Population and Development in Latin America
Raúl Urzúa

12 Population Research and Training Institutions in Latin America
Raúl Urzúa

The recommendations made by the IRG are addressed to three different (but sometimes overlapping) audiences: the social science community throughout the world; policy-makers in the developing countries; and the donor community. Accordingly, distribution of the Final Report and background papers has been limited to this audience. Although at the present time additional copies are not available, if interest so warrants, it is possible that one or more of these documents will be published in another form and made more widely available in the future. Inquiries may be addressed to:

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A NOTE TO THE READER

The Appendices to the IRG Final Report include two reviews of the status of knowledge and research on population and development in Africa South of the Sahara Appendix 7 by Akin L. Mabogunje and O Arowolo, and Appendix 7A by Helen Ware The two papers are complementary, and for a comprehensive overview it is recommended that both be read While there is some overlap between the two, particularly insofar as Ware had access to the Mabogunje and Arowolo review and drew on it in places, there are certain essential differences in material and topics covered

Appendix 7A by Ware is intended as a review of the literature for the period 1970-1978, while Appendix 7 by Mabogunge and Arowolo provides a broader historical perspective In addition to reviewing the state of knowledge on mortality, fertility and family planning, internal migration and urbanization, and international migration, Appendix 7 includes discussion of the following topics, which are either not treated or not treated as fully in Appendix 7A the nature, availability, and quality of demographic data in general, population size, growth rate, and structure; positions of governments on population growth and family planning, causes of the current status of knowledge and research on population and development, and recommendations for future research While the review of the literature in Appendix 7A is also organized around the basic demographic variables, discussion of the following topics, absent in Appendix 7, is also provided: the distinctive features of francophone Africa in views and research on population and development, the relationships among health, population, and development, marriage, the relationship between mortality and fertility; subfertility and infertility, and women and development

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1

INTRODUCTION

This report on the state of knowledge on population-development relationships in Africa South of the Sahara has been organized in accordance with the general framework agreed upon by the members of the International Review Group However, in spite of the Group's decision to pay limited attention to the issues of the availability and quality of data, it is considered important to review the data situation since this has tremendous influence on the relatively underdeveloped state of population research in the region Chapter 2 thus treats this problem in some detail, emphasizing the high dependence on limited sample survey data for many of the findings in social science research in Africa and the difficulty arising from this in making generalizations of any real amplitude In addition, the bias in emphasis and orientation that one finds in the area of population research in Africa is explored in terms of the dependence on external financing for population research

Chapters 3-6 consider five broad areas of the population-development relationship for which considerable research output exists--population size, growth rate and structure, mortality, fertility and family planning, and internal migration and urbanization For each of these areas, the review focuses on the determinants and consequences of these demographic variables and processes, the interrelationship between population dynamics and socioeconomic change, and the policy options that have been offered Chapter 7 on international migration is very brief This is an area where there have been significantly few studies but where in recent years considerable political decisions have been made Chapter 8 reviews the reasons underlying the current status of knowledge and research on population in Sub-Saharan Africa and recommends areas in which future research efforts should be concentrated

To facilitate discussion, the countries of Africa South of the Sahara have been grouped into four regions West Africa, East Africa, Middle Africa, and Southern Africa The countries comprising each of the regions are as follows

West Africa Benin, Cape Verde Islands, Gambia, Ghana, Guinea, Guinea (Bissau), Ivory Coast, Liberia, Mali, Mauritania, 1/ Niger, Nigeria, Saint Helena, Senegal, Sierra Leone, Togo, Upper Volta

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1. Although Mauritania and Somalia geographically form part of Sub-Saharan Africa, they are also members of the Arab League Hence, both countries are also considered in Appendix 9, "Social Science Research on Population and Development in the Arab Countries," by Riad B Tabbarah, Muhi A Mamish and Youssef Gemayel.

Middle Africa: Angola, Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea, Gabon, Sao Tome and Principe, Zaire

East Africa Burundi, Comoro Islands, Ethiopia, French Territory of Afars and Issas, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Reunion, Rwanda, Seychelles, Somalia, 1/ Tanzania, Uganda, Zambia, Zimbabwe-Rhodesia.

Southern Africa: Botswana, Lesotho, Namibia, South Africa, Swaziland

This regional division hides another equally significant division of countries in Africa South of the Sahara This is the division on the basis of their colonial experience between anglophone and francophone Africa To a considerable extent, attitudes toward population-related issues in many African countries have been influenced by the prevailing views in the colonizing country More important, this fact has significance for the research resources available: anglophone countries have access to not only local and British sources of funds but also the United States, while the resources in francophone countries are almost exclusively French in origin

The major bibliographic sources for this review are four The first is the volume by J.C Caldwell and C Okonjo, The Population of Tropical Africa (1968), which is a record of the proceedings of the first African Population Conference, held in Ibadan in 1966 The second is David and Ingeborg Radel, "Population and Family Planning in Rural Africa," Rural Africana, no 14 (spring 1971). This source, based largely on the Population Index, not only lists some 600 publications dating from 1965 to 1971 but also includes references to 64 on-going research projects in the field of population and family planning. The third source is S.H. Ominde and C N. Ejiogu, editors, Population Growth and Economic Development in Africa (1972), the product of a seminar in Nairobi in 1969, which was intended as a follow-up to the Ibadan conference. The last and most recent is J C Caldwell et al , editors, Population Growth and Socio-Economic Change in West Africa (1975)

In both content and references, these four sources give a fairly comprehensive view of research activities in the field of population in black Africa up to 1970 For more recent years, the most useful source is the Population Index, a quarterly publication of the Office of Population Research, Princeton University, and the Population Association of America

Two further comments are in order. The first is that serious research into population issues in black Africa can be said to date from after 1966 Before then, there were a number of studies, mainly geographical and anthropological, in which some description of population or comments about its influence on other phenomena of interest were often made As mentioned above, it was in 1966 that the first African Population Conference was held This conference represented a major event in the study of African population issues, especially as it created widespread interest in demography in many universities in the continent for the first time.

Serious scientific research on the population of Africa South of the Sahara is thus barely a decade old, a fact that is important in terms of our second preliminary comment--that a large part of current social science

research activities in the field of population has been concerned with issues of measurement or the identification of trends and tendencies. 2/ This has obviously been necessary, since to be able to say anything meaningful about population itself, let alone its relation with some other phenomenon, one must first know what he is talking about. Concern with measurement has not, however, prevented efforts at understanding the interrelationship between certain population parameters and other development variables But much of this work remains at the intuitive level and is often extrapolations to the African situation of supposed relationships in some other cultural or historical setting Rigorous empirical analyses of population-development relationships are conspicuous by their fewness, the more notable ones being in the field of rural-urban migration.

In general, this review is primarily concerned with those studies on population dynamics and development that attempt to draw out important interrelationships between the two and offer some policy prescriptions Such studies have not been made uniformly for all parts of the region Indeed, three countries--Nigeria, Ghana, and Kenya--and, to a lesser extent, Ivory Coast and Senegal account for a disproportionate share of existing studies It is assumed, however, that to a large extent findings in any of these countries have considerable application within the region

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2 The most important path-breaking work in this regard is W. Brass et al , The Demography of Tropical Africa, 1968

POPULATION DATA AND SOCIAL SCIENCE RESEARCH

Most of the available data on the population of Africa before the turn of the century are conjectural estimates Ricciolli thought that the population of Africa was about 100 million in 1661, while Willcox believed that numbers remained stationary at 100 million for two centuries after 1650 A less optimistic guess by Carr-Saunders put the 1650 base figure at 100 million, with a declining trend until 1800 All of these guesses were based on assumed characteristics of a primitive population of hunters and gatherers plagued by occasional famines, wars, slavery, and diseases.

Since the 1940s, periodic enumerations of the population and special research surveys, in addition to the establishment of vital registration systems in certain parts of the continent, have provided a more reliable basis for estimating the size as well as the demographic characteristics of the population of Africa. However, the quality of most of these data is generally regarded as poor, and a number of African countries have neither conducted a complete population census nor established a system of vital registration Yet population research depends on the availability of such data as well as data from special investigations.

Although the concern of this review is not with the nature of demographic data in Africa, the evaluation of research must be done with due regard to the constraints imposed on scholars by the availability and quality of data, especially as these affect the general orientation and focus of their work and the gaps in knowledge so created.

SOURCES OF DATA

The most common sources of data for population research include population censuses, vital registration reports, migration records, population registers, and special surveys Historical demography derives additional information from government records, ecclesiastical records of baptisms and burials in parish registers, and so on

Although there are estimates of the population for all countries and territories in Africa, not all of the figures were derived from results of systematic inquiries Although all but 3 of the 48 Sub-Saharan African countries and territories have conducted at least one census since 1955, only a little more than half have done so in this decade Thus, in many cases, current data are not available And the censuses vary in quality, especially with regard to the range of questions included. For instance, the 1963 census of Nigeria did not ask questions about marital status, exact place of birth (as opposed to country of birth), number of children born alive, number surviving, and migration experience. Although the 1973 census attempted to remedy these deficiencies to some extent, the point is that up to now, population censuses in Nigeria, like those in a few other African countries, do not permit analyses of national fertility, mortality, and internal

migration Gross inaccuracies have been revealed even in the data for those variables for which information is available, especially on the question of age According to Brass (1968), in his assessment of age distributions reported in the sample inquiries conducted in a number of francophone African countries

> . variations in proportions from one age group to the next are very erratic . . The discrepancies are too large and systematic in the different populations to be explained by true fluctuations in births, deaths, and migrations . The errors are generally in conformity with those found in other African censuses and surveys.

Only in Kenya have attempts been made to conduct a post-enumeration check for errors of content; thus, the determination of errors in most black African censuses is made even more difficult

Vital registration data on births, deaths, and marriages present an even gloomier picture Registration of vital events was initiated in Nigeria in 1867, initially limited to Lagos, and later extended to Port-Harcourt, Calabar, and Kano townships Similar efforts were initiated in Uganda in 1904, and in some other African countries in the 1930s Yet, in spite of the fairly long history of vital registration in these parts of Africa, the situation today is still one of limited coverage and underregistration For instance, in Mali, Nigeria, Tanzania, and Zaire, registration of births and deaths is carried out only in urban areas, or in one urban place, for example, Bathurst in Gambia. In the case of Sierra Leone, Ghana, Liberia, and Sudan, registration is confined to designated "registration areas." In Swaziland, such registration is only of the European population, while only births and deaths occurring among non-Africans are systematically registered in Lesotho and Uganda Reliable vital statistics are not available for Mauritania, Niger, Somalia, Zimbabwe Rhodesia, Upper Volta, Burundi, Ethiopia, Chad, and Ivory Coast Elsewhere, coverage is supposed to extend to the entire country but the general picture is still one of incomplete coverage.

Thus, sample surveys continue to be relied on for estimates of fertility and mortality and to determine the character of migration and urbanization We will now look at some of these surveys in terms of their general orientation, the contributions they have made to knowledge, and the major gaps that need to be filled by subsequent research surveys

DEMOGRAPHIC SURVEYS ORIENTATION, CONTRIBUTIONS, AND GAPS

Population studies in Africa South of the Sahara have generally focused more on the urban than on the rural sector, with limited attention paid to urbanization itself as a process Although population change is the result of the interaction of levels of fertility, mortality, and migration, research has been concentrated on fertility and, to some extent, rural-to-urban migration, with scanty research in the area of international migration and almost a total neglect of mortality Other aspects of population study such as labor force structure and participation rates, morbidity, and historical demography have yet to gain attention among scholars interested in the population of Africa Even on the subject of fertility, most of the surveys have had a general bias toward collecting KAP-type information, to the extent that, although the

social and economic characteristics of the largely urban family planning acceptors and potential acceptors are known in many African countries, we often do not have complete data with which to determine the national level of fertility that these family planning programs are supposed to regulate In fact, most of the family planning surveys are designed to investigate knowledge of, attitude toward, and adoption of clinical methods of contraception, neglecting the role of abortion and traditional methods of fertility regulation

Quite naturally, the need to justify the establishment of family planning programs in parts of Africa has led to a rather momentous increase in publications on population policy, usually based on KAP data that may or may not be national in scope. And when one scrutinizes the details of such policy recommendations there is again an over-emphasis on the subject of fertility regulation, even though practically all aspects of the population of Africa--urban and rural population conditions, labor supply and demand, births and deaths, marriages and divorces, morbidity and the epidemiology of diseases peculiar to Africa, fecundity and sterility, abortion and other means of fertility regulation--need to be studied in order to formulate a balanced population policy

The general urban orientation of demographic research in Africa may be a product of the characteristic concentration of social facilities (including universities and other research centers) and economic opportunities in the cities, a situation that is by no means peculiar to Africa But the general apathy of research scholars toward the countryside, though difficult to document, could also be a factor Otherwise, it is questionable why most of what we know about the demographic conditions in many African countries derive from reports on their capital cities and other urban areas. Needless to say, policy measures based on findings from largely urban research may be in error, given the atypicality of most of the primate cities in these countries. This point is made in Morgan's (1975) review of fertility studies in Nigeria

> Actually, a more serious defect with respect to demographic research here (in Nigeria) has been not so much the quality of the data as the fact that most studies have been confined to one area of the country the southwestern quarter . (which) is far from being typical either of Nigeria as a whole or of most other areas of Tropical Africa it contains , the two largest urban complexes not only in Nigeria but in all of Tropical Africa The area also contains three of the five universities in Nigeria, the two largest hospitals

And what is true of Nigeria is applicable to many African nations. Thus it is important that future population research include rural Africa

In general, studies of urbanization in parts of Africa have either neglected the components of city growth or have made uncritical generalizations about the all-pervasive influence of rural-to-urban migration Yet, clearly the growth of cities can result from natural increase and annexation as well as migration Any of these three factors can, singly or in combination, generate urban growth We do not know whether, as in Latin America, African

cities are growing rapidly principally because of natural increase (Urzua, 1978, p 108) According to a report by Arriaga (1968), among cities with populations of 20,000 and over, natural increase accounted for 58 0 percent of total growth in Mexico, 66 4 percent in Venezuela (excluding international migration), and 70 2 percent in Chile. This finding is in agreement with an earlier conclusion by Kingsley Davis (1965) that migration was the fundamental cause of urban growth in the countries that are already developed, but for today's developing countries, growth is due mainly to natural increase Mabogunje (1968) suggests that growth by natural increase "probably accounted for no more than a third of the growth of population in Lagos since 1951 " This is only an estimate, however, and future research on urbanization should be concerned with measures of increase based on census or survey data on place of birth and adequate data on births and deaths

In spite of the concentration of research efforts on rural-to-urban migration in relation to urbanization, the IUSSP Committee on Urbanization and Population Redistribution in Africa is of the opinion that "Africa exemplifies the conclusion that the magnitude of the problems of internal migration and urbanization is not matched either by the quantity and quality of the existing data on these phenomena or by the analyses which so far have been undertaken "

One may also add, on the basis of published reports, that students of migration in Africa have tended to specialize rather narrowly In the list of publications on the population of Sub-Saharan Africa 1965-1971 compiled by David and Ingeborg Radel (1971), the relative frequency of certain topics is indicative In the category of migration, for instance, out of 56 items only about 12 can be said to be concerned with international migration, the remaining 44 are on aspects of rural-urban migration Yet the changing character of production, transportation, and the politics of international exchange in Africa have generated remarkable interterritorial movements of population in the continent.

The neglect of mortality as an area of demographic inquiry in Africa is perhaps even more disturbing The Radels' bibliography for the 1965-1971 period contains only 17 publications specifically on mortality Apart from reports on Senegal, Uganda, Kenya, and Ethiopia, most of the works are based on analyses of published mortality data Judging from their titles, even the reports on specific countries are based on analyses of hospital records of still-births, perinatal mortality, and infant mortality, which are by no means representative of the national character of these phenomena

William Brass and others have developed sophisticated models for estimating mortality in African nations based on retrospective survey data These models are yet to be vigorously tested by field investigation and analyses of survey data Yet, given that estimated mortality rates rank among the highest in the world, it is incontestable that the prevailing condition of high mortality is a significant population problem in Africa The need for intensified research efforts in mortality, morbidity, and the epidemiology of diseases cannot be over-emphasized

It is obvious from recent publications that fertility and related topics occupy a prominent position in population research in Africa Of the 600

entries in the Radels' bibliography, about 150 or 25 percent deal with fertility, fertility regulation, and policy measures on fertility Among these, 48 items are on fertility and sterility and close to 80 on aspects of family planning and family planning program policies

The same pattern is revealed in Radel's (1971) report on 64 projects on population and family planning in Sub-Saharan Africa ongoing during 1970-1971 Table 1 shows a distribution of projects by country and major subject area The francophone countries are underrepresented In all, 20 nations appear in the list, with Nigeria (19), Kenya (7), and Senegal (6) accounting for half of all projects The tabulation shows the heavy concentration on KAP and family planning (17), internal migration (12), and methodological issues (9) Only 6 projects on fertility were reported

One implication, of course, is that it appears we know more about policy measures than the subject for which such measures are designed In spite of the apparent over-concentration of research efforts on family planning, little is known about the position of the African man on the issue of contraception. The role of abortion in fertility control has also been neglected In 1973, a conference on abortion in Africa was organized by the International Planned Parenthood Federation (IPPF) in Accra, Ghana to discuss many aspects of the problem Among other things, the papers presented and the discussions at the conference all point to the lack of data on induced abortion, the need to collect more information on the frequency of induced abortion, and the social, economic, demographic, legal, and moral implications for African nations Most of the issues raised were based on scanty data, and since these are matters of utmost importance affecting social and economic transformation as well as legal reform, they call for immediate attention from scholars and government research agencies in Africa.

THE EFFECT OF EXTERNAL FUNDING ON POPULATION RESEARCH

The biases noted in specific areas of population research in Africa may not be unrelated to the sources of research funds and the conditions under which such funds are usually made available to scholars A substantial proportion of funds for population research or "population activities" in Africa originates from foreign governments or their private agencies, and international organizations For instance, in Ghana during the period 1 January 1970-30 June 1971, out of a total of about US $1.6 million in funds for family planning activities (which is the pampered child of population assistance to Africa), only 26 percent originated from local sources.

Population assistance, like any foreign aid for development, because of the conditions under which or the purpose for which such aid is usually granted, cannot be expected to give scholars the kind of free hand needed to achieve a balance in population research The scholar is circumscribed As noted in an assessment of population assistance to Africa (1969-1970), "population assistance suffers from the same problems as most development assistance, such as lack of continuity, too rigid criteria governing how aid must be spent, delays in approval and receipt of assistance, and local currency shortages."

TABLE 1: Classification of Population and Family Planning Research Projects in Sub-Saharan Africa, 1970-1971, by Topic

Country	Topic								
	General	Internal Migration	Fertility	Nuptiality and Kinship	Population Growth and Pressure	Population Policies	KAP and Family Planning	Methodology	Total
Senegal	1	2	1	1	-	-	-	1	6
Dahomey	1	-	-	-	-	-	-	-	1
Ghana	1	-	-	-	-	-	2	-	3
Nigeria	-	4	1	-	1	1	8	4	19
Sierra Leone	-	2	1	-	-	-	1	-	4
Upper Volta	-	-	1	1	-	-	-	-	2
Niger	-	-	1	-	-	-	-	-	1
Ivory Coast 1/	-	-	-	-	-	-	-	-	-
Chad	-	-	-	-	-	-	1	-	-
Cameroon	-	-	-	-	-	1	-	-	1
Ethiopia	-	-	-	-	-	-	1	-	1
Kenya	-	-	-	1	1	-	3	2	7
Rwanda	-	-	-	-	1	-	-	-	1
Zaire	-	-	-	-	-	-	-	1	1
Uganda	-	-	-	-	1	-	-	1	2
Angola	-	1	-	-	-	-	-	-	1
Tanzania	-	2	-	-	1	-	-	-	3
Zambia	1	-	-	-	-	-	-	-	1
Rhodesia	1	-	-	-	-	-	-	-	1
Botswana	1	-	-	-	-	-	-	-	1
Others	-	1	1	2	-	2	1	-	7
Total	6	12	6	5	5	4	17	9	64

1 Joint project on Abidjan, Douala, and Yaounde.

SOURCE. David Radel, "Current Population and Family Planning Research in Sub-Saharan Africa Systematic Information on 64 Projects." Rural Africana, no 14 (Spring 1971).

That research in population in this continent has, in recent years, been mainly in the area of family planning programs and related issues is largely due to the nature of population assistance to Africa, especially since local funds are scarce As revealed in Table 2, although population assistance to Africa increased by about US $3 million from 1969 to 1970, most of this increase was in the area of family planning In fact, 80 percent of current assistance in population activities is for family planning

This is not to say that foreign funds should be discouraged, rather, more of such funds are needed in all parts of Africa But in order to expand the scope of population research in Africa, both government and local private agencies in African countries should allocate more funds for population studies so that while foreign funds are expended, if need be, mainly on family planning research, funds from local sources can be invested in studies of mortality, sterility, labor force, urbanization, and international migration, as well as on the training of personnel and the establishment of vital registration systems Only then can we ensure that population research in Africa is not mainly an adventure in fertility regulation.

TABLE 2: Summary of Population Assistance to Africa by Category, 1969-1970 (US dollars)

Category	1969	1970
Family Planning	4,454,940	7,155,355
Demography	1,194,329	1,059,601
Other	514,440	852,520
Total	6,159,709	9,067,476

SOURCE: "Population Assistance to Africa, 1969-1970 " In African Population Conference, Accra, December 1971 (Pop Conf. 2 #29).

POPULATION SIZE, GROWTH RATE, AND STRUCTURE

Africa South of the Sahara is a region of diverse demographic features Although the sub-continent is generally sparsely populated, there are obvious signs of population pressure in certain areas It is a region at the pre-transition stage of demographic evolution, characterized by high fertility, but this excludes large parts of Middle Africa--notably Gabon, Central African Republic, Cameroon and parts of the Congo--where sub-fertility remains a problem Mortality, especially infant mortality, is very high, creating a low life expectancy at birth The urban mortality rate is generally lower than that of the rural population, however Africa is the least urbanized continent in the world and, within the continent itself, tropical Africa is the most-rural Yet one of the major population problems in the sub-continent is the rapid rate of urbanization and the inability of the urban areas to play a dynamic role in the process of development It is even argued that, in spite of the overwhelming rural character of its population, Africa is probably over-urbanized

Perhaps the two population problems most common among the countries of the sub-continent are a high rate of population growth and the "perceptible drift" of population from the countryside into the towns and cities Also common to the countries of Africa South of the Sahara is the youthful character of their populations, with its implications for potential population growth and a high dependency burden

It is estimated that the population of Africa South of the Sahara was 302 million in 1975, representing about 76 percent of the total population of the continent East Africa, with an estimated population of a little over 116 million, is the largest of the sub-regions, closely followed by West Africa, with an estimated population of about 115 million in 1975 Middle Africa and Southern Africa contained 42 3 million and 27 9 million inhabitants, respectively, in that year

Absolute population size of a region or country is of little significance except with reference to the resource base and level of technological development Although optimum population is not density dependent, references to the population of Africa South of the Sahara and the resources base are generally with respect to absolute density and agricultural density, obviously because of the preponderance of farmers among the working population In this regard, Hance (1970, 1972), Blayo and Blayo (1971), Som (1972), van de Walle (1972), and others emphasize the limited population density of this region, with the exception of parts of West Africa Overall, population density in the region is about 12 persons per square kilometer, ranging from 6 persons per square kilometer in Middle Africa to 16 in West Africa, Individual countries exhibit considerably higher densities, especially Rwanda (121), Burundi (118), and Nigeria (63) Population density in most of the islands in the sub-continent is much higher, ranging from 407 persons per square kilometer in Mauritius to 130 in Seychelles

For each of the countries in this region, the ratio of population to arable land is much higher, and it is this ratio that constitutes the measure of population pressure in the literature Whichever measure is employed, however, there seems to be a consensus in the literature that pressure of population on land is generally not yet a problem. In parts of West Africa, where such problems exist, considerable movements of population are being experienced--both rural-rural and rural-urban migrations (Udo, 1972, Hance, 1970, Olusanya, 1969c, Buchanan and Pugh, 1966) To alleviate the problem of population pressure in these isolated instances, various policy suggestions have been made. These include agricultural settlement schemes (FAO, 1966), deliberate "ruralization" of industries, and industrialization of rural-based crafts and production processes (ILO, 1970).

While high population densities tend to generate problems of pressure on land and other resources, Boserup (1965) argues that the existence of very low population density over most of Africa South of the Sahara tends to militate against large-scale social and economic development programs She emphasizes that both ancient and more recent history suggest that a concentration of population in one area, accompanied by a change to intensive systems of cultivation, will take place only under the pressure of increasing population density or when a population has slave labor to work harder in agriculture than free members of the community are prepared to do. She gives the example of one tribe that, for some reason, had a more rapid rate of growth than its neighbors Contrary to what Malthusian thinking would suggest, the tribe saw a third choice other than starvation or conquest of territory. Instead, the young men of the tribe captured additional labor outside their own territory and put them to agricultural work. In this way, by taking advantage of their larger numbers and enslaving members of neighboring tribes, a tribe experiencing rapid population growth could secure for itself the advantages of dense and permanent settlement while avoiding the burden of additional hard work in agriculture Thus, she concludes, "a beginning of economic development would be achieved by the method of increasing the population through imports of slave labor. In fact, population increase is a condition for economic development in its first stages."

No rigorous empirical data are provided to justify the assertion of a relationship between population growth and development in its initial phase However, in many parts of Middle Africa, particularly in the Central African Republic, Gabon, Congo, and Angola, where population density is today between 2 and 4 persons per square kilometer, Blayo and Blayo (1971) suggest that the low population density is due to historical factors, such as the slave trade, or to some of the consequences of colonization, or to problems of sub-fertility "attributed to a higher incidence of pathological sterility " Based on a study of the Bakweri population in the Cameroons, Ardener (1962) argues that sub-fertility can also be attributed to a high rate of conjugal mobility The literature is surprisingly silent on policy measures to raise fertility where levels are unusually low, in order to increase the low population density The Executive Secretary of the Economic Commission for Africa (ECA) once said that his commission "supports the view that countries plagued by the problems of involuntary subfertility and infertility should seek appropriate remedies in the context of their own development needs." As borne out by the report of an International Workshop on Correlates of Sub-Fertility and Infertility held in Ibadan in 1973, little is known about the causes of infertility and thus

policy measures to solve the problem must await the results of more intensive and extensive research efforts in the future

The Malthusian specter of population growth seems to be exemplified by the most recent reports on population growth in Africa South of the Sahara The ECA estimates that between 1956 and 1960 the rate of natural increase was 2 3 percent for West Africa, 2 4 percent for East Africa, and 2 2 percent for Middle Africa. Estimates available for Southern Africa indicate consistently higher rates than in any other region of the sub-continent, computed to be about 2 7 percent during 1956-1960 by the US Bureau of the Census The most recent estimates (1970-1975) show the following regional patterns· Southern Africa, 3 0 percent, East Africa, 2 8 percent, West Africa, 2 6 percent, Middle Africa, 2 3 percent

There is no given rate of population growth that is inherently undesirable Much depends on the relationship between population size and growth rate on the one hand and resources and the level of technology for their utilization on the other (Ojo, 1968, Som, 1968) But Som also argues that there is a definite relationship between the rate of population growth and investment requirement· "The higher the rate of population growth, the more, proportionately, of the national income that should be invested in order to keep the per capita level of living at the same level as before, and the less, therefore, of the total investment that is available to increase the level of per capita living " Generalizing from data derived from Ghana and Kenya, Som concludes that actual investment in most African countries has been less than planned because of the generally high rates of population growth, which requires that about three-quarters of the family income be expended on food alone

It is important to note the peculiar nature of population growth in this part of Africa According to Blacker (1967), in Western Europe during the eighteenth and early nineteenth centuries, population growth followed in the wake of economic development, but in Africa today, it is economic development that is being fostered in the wake of an expanding population While the downward trend in mortality in Western Europe was due largely to economic development, in recent years dramatic reductions in mortality have been achieved in Africa due to importation of medical technology but "without necessarily any economic growth at all."

In those parts of the region where a dense agricultural population is experiencing a rapid rate of growth, it is assumed that the resultant pressure on land is giving rise to an encroachment on fallow (Allan, 1967) and also to "the atomization of land into very small units, with an extremely detrimental result to agriculture in general" (Blacker, 1967) The drift of population from such areas is generally regarded as a negative factor in development since most of such displaced persons are assumed to head for urban areas to join the ever-growing reserve of the unemployed. That a good proportion of such individuals constitute the army of internal colonizers of unused and underutilized rural land is seldom given the attention it deserves Much of the work of R K Udo on rural-rural migration emphasizes the amount of resource development undertaken in sparsely populated areas by migrants from areas of high density

The policy options usually proferred for dealing with the high rate of population growth in many parts of the continent are remarkable for their sameness. Since natural increase is the result of the balance of births over deaths and a policy of mortality increase is unthinkable, fertility is the obvious scape-goat, and the literature portrays it as such It is noteworthy, however, that only in Ghana has immigration been a factor in the high rate of population growth, there, the average rate of population growth exceeded the rate of natural increase by 0 6 percent between 1948 and 1960 Immigration into Ghana decreased following the 1969 Aliens Compliance Order, which led to a large-scale expulsion of immigrants in Ghana If the present immigration policy remains in force, Gaisie (1969) and others predict that the future contribution of immigration to population growth will become negligible

AGE COMPOSITION

African nations in general exhibit the features of a young population In many countries, youths under age 15 make up more than 40 percent of the total population. According to Blayo and Blayo (1971), the proportion of the population under age 15 in all African countries (except Sierra Leone, Liberia, Gabon, and Namibia) is at least 45 percent and occasionally above 50 percent (Togoland, Chad, Lesotho, and possibly Kenya). The range in West Africa is from 37.8 percent in Sierra Leone (1963) to 51.4 percent in Togoland (1961). Both Middle and Southern Africa exhibit the same pattern of variability with respect to the share of youths in national total populations. In Middle Africa estimates vary from 33 2 percent in Gabon (1960-1961) to 50 1 percent in Chad (1963-1964), while in Southern Africa the range is from 39.4 percent in Namibia (1960) to 50.5 percent in Lesotho (1966) In East Africa, the proportions of youths are uniformly high, generally over 45.0 percent, and in Kenya estimates show that the population has been growing younger (the proportion aged 0-14 increased from 46.3 percent in 1962 to 48 6 percent in 1969).

There is no controversy in the literature as to why these African countries have young age structures. Apart from possible age misreporting, the youthful character of the population of Africa South of the Sahara is generally attributed to the influence of persistently high fertility under conditions of moderate declines in mortality, especially peri-natal and infant mortality.

One consequence of a young population is a high dependency ratio (Som, 1972, Blayo and Blayo, 1971; Angwenyi, 1972). A young population also has implications for an increasing school-age population, with the attendant problem of a reduction in the literacy rate, already low in almost all Sub-Saharan African countries Education budgets in most countries are inelastic, and if literacy standards are to improve significantly one solution is to curb the growth rate of the school-age population. Otherwise, national governments in Africa South of the Sahara will be faced with an up-hill task in attempting to improve literacy standards. As Gavin Jones (1971) put it "It is a matter of running up the down escalator, it is possible to reach the top, but the effort involved is much greater than it would be if the escalator were halted."

MORTALITY

Mortality is a neglected area of study in almost all the countries of Africa South of the Sahara Where reports are available at all, they are limited to available census data or sample surveys taken at different points in time It is therefore difficult to assess the regional pattern of mortality in the sub-continent at a given period or to attempt a trend analysis of this crucial demographic variable.

Nevertheless, a few generalizations concerning the conditions of mortality in the sub-continent can be made One generalization common to all the available reports is that the levels of mortality within the nations of Africa South of the Sahara are among the highest in the world. According to the Demographic Yearbook estimates, Africa recorded an average crude death rate of 21 per 1,000 population between 1963 and 1969, followed by Asia's 16 per 1,000 During this period both Europe and Oceania had an average crude death rate of 10 per 1,000, and USSR's 7 per 1,000 was the lowest among the major regions of the world Within the sub-continent, crude mortality rates vary widely, West Africa, 25 per 1,000, Middle Africa, 24, Southern Africa, 16, and East Africa, 17 (WHO, 1971)

Estimates by Som (1968) show that these regional averages conceal a great deal of variability among the nations With a crude death rate of 40 per 1,000 and an estimated infant mortality rate of 216 per 1,000 live births (1954-1955), Guinea had the highest level of mortality in all of Africa and perhaps the lowest life expectancy at birth of any human population Outside West Africa, Gabon also compares with Guinea, with an estimated crude death rate of 30 per 1,000 and an infant mortality rate of 229 per 1,000 live births in the early 1960s In East Africa, fairly low mortality levels are reported; Som's report (1968) indicates a crude death rate of 8 6 and 9 9 per 1,000 for Mauritius and Reunion, respectively East Africa occupies a middle position among the regions of Africa, with an average crude death rate of 17 per 1,000 and a life expectancy at birth of over 40 years (WHO, 1971)

Infant mortality rate is generally regarded as a more reliable indicator of health than crude mortality rate Except in a few islands, infant mortality rates in all countries of Africa are exceedingly high at least 120 out of every 1,000 live-born children die before the age of one year (WHO, 1971) The value is considered an underestimate Som's report (1968) indicates that both Guinea and Niger show the highest levels of infant mortality in West Africa, with 216 and 200 per 1,000 live births, respectively Again, Mauritius and Reunion, with infant mortality rates of 56 7 and 74 2 per 1,000 live births, respectively, exhibit the lowest levels recorded for any country in the sub-continent

Little is known about the causes of death in Africa South of the Sahara This is due to several reasons. (1) compulsory registration of vital events is limited to a few countries, (2) where registration systems exist, the

geographic scope of coverage is limited; and (3) even where records of cause of death are available, they are generally subject to considerable errors arising from inaccurate diagnoses (WHO, 1971, Coale, 1968, Som, 1968) The WHO account assumes that during the past 25 years a shift has occurred in the rank order of the major killers According to their report

> Mass campaigns against communicable diseases have made a remarkable contribution to the decline in mortality and morbidity in many diseases. Mass vaccinations have played a part in reducing the incidence of yellow fever, smallpox, whooping cough, tetanus, diptheria and tuberculosis However, diseases like yellow fever, typhus, smallpox, tetanus and tuberculosis periodically cause high mortality Diseases of the respiratory system are found in all age groups of the population Enteritis, tetanus and congenital malformations cause a great number of deaths, particularly among infants and children But by far the biggest killer on the African continent is malaria and it will be so for years to come

One can only add to the long list above the possible impact of high fertility and mortality Where medical services are not easily available (as in most of the rural areas of Africa) childbirth exposes women to a very high risk of death. Larger family sizes are reported to be associated with a higher incidence of illness, prematurity, mortality, and retarded growth among siblings Mothers tend to suffer from "maternal depletion syndrome" if birth intervals are short, and when short birth intervals are combined with higher parities, the dissipation of energy in childbirth and child care increases the risk of maternal mortality, especially where medical facilties are not available (Arowolo, 1974, Wray, 1971; Sai, 1971). This is why family planning programs are sometimes regarded as an integral part of national health programs (Akinla, 1967). But if family planning is an indirect policy measure against mortality, the WHO provides a policy guideline for overall mortality reduction in Africa

- Medical progress and the application of new knowledge to the prevention, control and care of various diseases,
- Mass vaccinations and mass eradication campaigns;
- Improvement of the health infrastructure (construction of hospitals, education and training of health personnel and financial aid),
- Improvement of general sanitary conditions;
- Socio-economic development,
- A rise in living standards.

With regard to mortality differentials, such as between urban and rural areas or socioeconomic classes, the paucity of studies is also very notable One exception is the study by Cantrelle (1975) of the mortality situation in a number of French-speaking African countries Cantrelle explores the relationship between mortality and certain indicators of social and economic development, notably agricultural production, climate, urbanization, and public

health services Referring to specific examples from Senegal, Cameroon, and Niger, he speculates that, apart from the independent effect of diseases, the differentials in mortality among segments of the rural population in these countries might not be unrelated to the "influence of nutrition, undernourishment and malnutrition," suggesting that policies promoting agricultural development, if geared toward providing adequate nutrition, are capable of reducing mortality rates in African countries.

All available data show that urban areas exhibit lower mortality rates than rural districts. Cantrelle maintains that this differential will continue to increase in the years ahead The differential is attributed to the better economic status and higher standard of living of urban dwellers, as well as the concentration of medical facilities in urban areas With regards to policy on mortality in general, Cantrelle argues that improvement of economic conditions would be more effective in reducing the overall level of mortality than direct public health programs

5

FERTILITY AND FAMILY PLANNING

Issues of fertility and family planning tend to be jointly discussed in the literature, perhaps with justification Fertility is the most crucial demographic variable in population dynamics, and the much-publicized need to "control" the generally high levels of fertility among most Africa nations in order to raise per capita income has led to the popular tendency to treat family planning studies (of contraceptive knowledge, attitudes, and practice) as an integral part of fertility research Fertility is the variable to be "regulated" and family planning provides the means

Africa South of the Sahara is the most fertile of the major regions of the world Based on estimates of birth rates in tropical Africa, Coale and Lorimer (1968) conclude that, with an overall birth rate of 49 per 1,000 and an average total fertility of 6.5 children, this region is exceptionally fertile. It is generally accepted, however, that fertility levels are not evenly distributed throughout the region For instance, a ridge of high fertility is identified as extending in East Africa from southeastern Sudan down through parts of Uganda and Kenya, through Rwanda and Burundi and parts of Tanzania, and through the southern and eastern provinces of the Congo into Zambia, Southern Rhodesia, and the southern provinces of Mozambique. This ridge of high fertility reappears along the coast of West Africa from southern Nigeria to the Ivory Coast, and northwards through western Nigeria into parts of Niger and Upper Volta (Coale, 1968) Page and Coale (1972) later confirmed the East-Central African ridge of high fertility as well as its West African extension, which they observed also incorporates Mauritania and parts of Mali Within the high fertility belt, total fertility is estimated at an average of over 6 0 children

While high fertility is a problem in most parts of the sub-continent, there is also need to appreciate the problem of sub-fertility and infertility that has plagued a few countries in this region for quite some time Sub-fertility and infertility afflict a number of Middle African countries, notably the Central African Republic and Cameroon (Adadevoh, 1974) Infertility, causing "numerical regression," is also a problem in the eastern and equatorial provinces of the Democratic Republic of Congo and among the Zandes and Nzakaras of the Eastern Oubangui (Retel-Laurentin, 1971). Page and Coale (1972) have also identified "a few islands of apparent lower fertility" in West Africa, namely Gambia, Portuguese Guinea, Sierra Leone, Liberia, and northern Ghana

When all the estimates are taken together, West Africa appears to be the most fertile region in the sub-continent, with an estimated crude birth rate of 47 51 per 1,000 population in 1974 This region is closely followed by East Africa, recording 46-50 births per 1,000 population in the same year Southern Africa's average of 39-40 per 1,000 population is easily the lowest, with the Middle African region occupying an intermediate position (US Bureau of the Census, 1976)

Since the level of fertility in no country in Sub-Saharan Africa is lower than 30 per 1,000 population, it is safe to conclude that the sub-region is still at the initial phase of demographic evolution What has social science research identified as the determinants of high fertility in Africa South of the Sahara? Based on sample survey data or other kinds of stock data on a limited or national scale, research indicates that the persistence of high fertility in this part of Africa is broadly related to the following factors·

1 widespread illiteracy of the population,

2 limited urbanization or widespread rural dwellings,

3 preponderance of farmers and related workers in the work force;

4 high mortality, especially at infancy,

5 traditionalism and religion beliefs;

6 low age at marriage, universality of marriage, and polygamy,

7 poverty of the population, and

8 limited knowlege of, negative attitude toward, and restricted practice of modern methods of fertility regulation

It is difficult to relate the regional variations in fertility in the sub-continent to the characteristics listed above. For one thing, reports on factors affecting fertility are available for small population groups within countries or, at best, for national population groups, and the variables identified with fertility patterns differ from one report to another, depending upon the researchers' objectives. Also, such reports differ with respect to time, study population, and objectives

Common to most reports on fertility in Sub-Saharan Africa is the notable influence of certain indicators of modernization, for example, reduction of venereal disease (Romaniuk, 1968), increasing levels of educational attainment (Olusanya, 1969b, Arowolo, 1976), and urban living (Olusanya, 1969b, Caldwell, 1969b, Ekanem, 1974, Dow, 1971, Ohadike, 1968a, Gaisie, 1969, Ejiogu, 1968, Friedlander, 1968)

In his report on the Congo (now Zaire), Romaniuk noted the existence of striking differences in fertility rates among regions. These differences were said to be associated with a high incidence of childlessness, attributed to venereal disease, in certain regions Pathological childlessness is also known to be the major cause of infertility and sub-fertility in the low-fertility belt of Middle Africa, to which reference has been made Caldwell, therefore, argues that reduction of venereal disease (arising from better health measures in the course of modernization) and perhaps greater stability in sexual relations will tend to raise the birth rate

Education appears to be the most important single variable commonly cited in association with variations in fertility and family planning practice. Higher levels of educational achievement are commonly reported to be negatively

related to fertility (Ghana Caldwell, 1967a, 1969b, tropical Africa Okediji, 1973, Lagos, Nigeria Ohadike, 1968b; Sierra Leone. Dow, 1971, Nigeria Caldwell and Igun, 1970, Kenya Ejiogu, 1972)

Education acts as a fertility depressant in part because it tends to increase knowledge of favorable attitudes toward and practice of family planning Morgan's (1972) report on Lagos, like the others cited, indicates that educational level is positively associated with family planning clinic attendance In all these reports it is contended that not only do educated women show greater knowledge of modern family planning methods, but they tend to be more favorably disposed to using these methods and they practice family planning more effectively Olusanya (1969a) identified certain cultural barriers to the acceptance of modern techniques of fertility regulation among the Yoruba in western Nigeria (namely, sex preferences, fears about promiscuity and marital infidelity, misunderstandings about modern contraceptives), but felt that education would erode these traditional barriers.

The emergence of rural-urban fertility differentials in parts of Sub-Saharan Africa is seen by some as evidence of an imminent fertility decline, especially in urban places. Gaisie (1969) has shown urban fertility to be 10 percent less than rural fertility in Ghana. Caldwell (1969b, 1971) also reported higher rural than urban fertility in Ghana, which he attributed to differences in age at marriage, marital stability, survival chances, and level of educational attainment In an earlier study, Caldwell (1967a) derived child-woman ratios from the 1960 population census of Ghana that suggested lower fertility among urban dwellers than the rural population This is a weak measure of fertility, if only because the child-woman ratio is highly susceptible to "migration bias," and the author took note of this problem Nevertheless, he concluded then, as he later emphasized, that the urban areas of Ghana would initiate the process of fertility decline in the country

Ohadike (1968b) has identified certain factors indicating the possibility of fertility decline in Lagos' rising age at marriage, increasing demand for education, and widespread use of modern methods of contraception within marriage He contends that the structure of families in Lagos is becoming more nuclear than extended Ekanem's reports (1974a and b) give the same general impression of lower urban ferility in parts of the former Eastern Region of Nigeria Among the Ibo population that he studied, urban women have lower fertility than rural women, especially at ages 15-39 Dow's (1971) study of rural and urban sections of Sierra Leone found a substantially higher average number of live births among rural women than women in the towns and in metropolitan Freetown Mali, Guinea, and Togo are classified by Cohen (1967) as countries with lower urban than rural fertility

There are, however, other reports on rural-urban fertility differentials that suggest the contrary Completed fertility among urban women in Ekanem's study (1974) was higher than that of rural women Earlier, Olusanya (1969b) reported a higher fertility rate among the urban population than the village population he studied In a recent report, Arowolo (1976) has shown that urban Ibadan women have higher fertility than rural women, especially when the influence of differences in literacy is controlled This he attributes to the better health and environmental conditions to which urban women are exposed, regardless of their educational levels, as compared to residents in the rural

localities studied, who do not enjoy the benefits of modern hospitals and clinics, pure water, electricity, and modern sanitation Romaniuk (1968) found higher natality among urban as compared to rural communities in Zaire According to his calculations, the adjusted birth rate was 44 for rural and 52 for urban areas He attributed this differential, in part, to a higher proportion of married women, especially in the younger ages, among urban women and possible differences in fecundity Data from Gabon and, to some extent, Upper Volta also show higher urban than rural fertility (Cohen, 1967)

Evidence from studies of rural-urban differences in family planning attitudes and practices does not seem to clarify these apparently contradictory findings about rural-urban differentials in fertility in the sub-continent Pool (1967) reported that urban respondents in a Ghana study demonstrated better knowledge of and more concern about family planning than their rural counterparts An evaluation of the experimental rural family planning program in Ishan Division (Irrua, Nigeria) concluded that the prospects of a widespread acceptance of modern family planning methods in the rural areas are bleak (Ascadi, 1972) Arowolo's (1976) findings from Nigeria give a similar impression 18 percent of interviewed women in Ibadan had ever used a modern method of contraception compared to less than 5 percent in the smaller towns studied Indeed, in one rural area, knowledge or use of any modern method was nil If family planning practice is an urban rather than a rural phenomenon, one policy implication is that investments in family planning programs are likely to be more rewarding if directed to the better-informed, highly motivated urban population of the sub-continent

Studies of the relationship between education and fertility are also inconsistent in their findings Pool (1968) and Gaisie (1969) present convincing evidence for Ghana of the existence of a negative relationship between educational achievement and fertility levels Studies on Nigeria are not conclusive on this issue A 1964 study of Lagos found that educational levels of both wives and husbands were negatively related to fertility levels (Ohadike, 1968) Similar findings have been reported for Ibadan by Okediji (1967) and parts of Sierra Leone by Dow (1971) However, Olusanya's report (1969b) of a study of rural and urban areas of the former Western Region of Nigeria indicates a general tendency for reported average number of children born alive to be higher among educated than uneducated women This finding may not contradict other reports, however, since his analysis is based on a limited classification of educational attainment (no education and primary and above), whereas other studies have attempted to relate fertility levels to varying degrees of educational attainment Indeed, a recent study (Arowolo, 1976) of Ibadan shows that women with high school education appear to have slightly lower fertility than primary-school educated women, and university trained women report a lower level of fertility than high school graduates But primary education, by exposing the recipients to rudimentary rules of hygiene and better dietary habits, may result in higher fertility without changing traditional attitudes toward family size

Small-scale studies in Ghana (Busia, 1954), in Nigeria (Ekanem, 1974a and b), and in Zaire (Brebant, 1954) have examined the relationship between polygyny and fertility Brebant's report on Zaire seems to support the thesis that polygyny is associated with lower fertility than monogamy "the effective fertility rate," defined as the ratio of the live births registered during a year,

to the number of married women of specified ages, probably 15-45 years, "is lower in polygamous marriages than in monogamous marriages from 25-45 percent, with an average of 31 percent." Busia (1954) did not observe any significant difference in fertility between monogamously and polygynously married women in Ghana However, even if polygyny serves to increase fertility, its incidence in any human population is limited and can be expected to disappear with modernization

Little is known about the influence of religion, occupation, and income on fertility in Africa South of the Sahara. With regard to religion the general contention is that religious group differences in fertility are due to differences in contraceptive practice, religiousness, type of education (secular versus religious), socioeconomic status, ethnicity, and minority status Although research reports elsewhere seem to confirm this general hypothesis, the multiplicity of religious groups with different religious philosophies sets a limit on the extent to which findings from one region can be extrapolated to another with similar religious orientation

One specific hypothesis that has been tested in parts of Africa relates to the implications of religion for contraceptive use. Given the pro-natalist position of certain religious groups (e.g , Catholics, Moslems) and the varying degree of permissiveness on the issue of family planning among others (e g , Protestants, Jews), the explanation of differential fertility lies mainly, other factors being the same, in religious group differentials in knowledge of, attitudes toward, and practice of family planning

In parts of Sub-Saharan Africa, Caldwell finds no impact of religion on contraceptive adoption His report on a survey of economically better-off urban families in Ghana showed little significant association between the willingness to use family planning clinics and the religion of either husband or wife In Mauritius, the Catholic Church is reported to give active encouragement to "approved methods" of family planning Even in the predominantly Moslem countries of Africa, it has been shown that the adoption of family planning has little to do with religion The real obstacles to family planning programs in Sub-Saharan Africa, as borne out by Caldwell's work, are social and economic lack of finance, shortage of trained personnel, insufficient publicity, uncertainty of government support, the difficulty of supplying remote and rural areas, rural illiteracy, and suspicion on the part of those holding more traditional attitudes

There is little in the literature on the relationship between occupation and fertility in Sub-Saharan Africa, and the little evidence available does not lead to any definite conclusion It is only in the advanced, industrialized societies that research has shown convincingly the existence of a negative association between female labor force participation and fertility In the less-developed countries, the relationship is generally not clear Ohadike (1968) observed among Lagos women that the relationship between occupation and fertility is not clearly delineated, educational as well as maternal age differences explain, in part, differences among occupational classes Arowolo's report (1976) of a study of 6,606 women in Ibadan city comes to a similar conclusion no clear-cut pattern of fertility differentials is discernible among the identified occupational categories of women

Part of the explanation for this obscured relationship may be because the joint roles of mother and worker in the studied population do not involve a great deal of role conflict, and the crucial issue is role compatability rather than mere employment status. It is suggested that even where role conflict among working mothers is not in doubt, accessibility to house-helpers (relatives, houseboys, maids) provides "adequate adaptive mechanisms" for integrating traditional, rural cultural norms of high fertility into the pattern of modern urban living (Arowolo, 1976). So far, increasing participation of African women in urban-type occupations does not seem to be generating the expected negative effect on their fertility

Since the emphasis in the literature on fertility seems to be on the extent of contraceptive use, it is worthwhile to examine the policy recommendations in the literature regarding the dissemination of family planning information and services in Sub-Saharan Africa. Modern clincls provide several services and it is consequential to operating strategy which of the services or contraceptive methods available are most acceptable to the population

According to almost all reports, the most common family planning methods available in clinces are the pill, IUD, and condom. Although reports are silent on why users prefer one method over another, the popularity of the pill may not be unrelated to the cost and ease of purchase outside the clinics. In addition, the possible side effects of the pill do not typically result in pain or bleeding, as do those associated with the IUD, and thus may be more tolerated

According to Wright (1968), the training of a large number of nurses, midwives, and paramedical auxiliaries is necessary if a country like Nigeria is to operate a nationwide program of family planning. Hartfield (1968) also emphasizes the potentialities of paramedical personnel in the provision of family planning services, arguing that the nurse/midwife can be relied on to insert IUDs with minimum risk even in rural areas. Along the same line, Caldwell advocates including family planning courses in the training programs of African medical students. Caldwell, Mort, Arowolo, and Akinla (1967) have argued that health services be increased and expanded to incorporate family planning clinics so that modern methods are more accessible to the people

The family planning message can be brought to the people more effectively through the government or its agencies; and to this end, Caldwell recommends that the respective governments be educated. Based on analysis of hospital data and survey information on abortion in Nigeria, Adadevoh and Akinla (1969) recommended sex education for young girls. Lambo and Bakare (1971) explored the psychological dimensions of family planning practices in three contrasting segments of the population in parts of Nigeria and concluded that different communication techniques should be used for inducing different segments of the population to accept modern methods of family regulation

A review of government positions on population growth and family planning as of 1977 shows five countries with official policies to reduce the growth rate and 13 who officially support family planning activities for other than demographic reasons (Table 3). Specifically, Botswana, Ghana, Kenya, Mauritius, and Senegal fall in the former category. In addition to the 13

TABLE 3 Government Position on Population Growth and Family Planning, for Selected Countries in Africa South of the Sahara, 1977

Country	1976 Population (in millions, est)	Government Position: A, B, or C (see Notes)	Government Position: Year Adopted	Comment
Angola	6 3	C	-	
Benin, People's Republic of (formerly Dahomey)	3 2	B	1969	The government's development plan calls attention to the problems of education and employment posed by the large proportion of the population under age 15 The maternal and child health service incorporates the concept of child spacing The Family Planning Association has been officially registered since 1972 A population census was conducted in 1975
Botswana	0 7	A	1970	According to Chapter 14 of the 1976-81 National Development Plan, the health policy incorporates making "family planning advice and materials available to all potential parents and by so doing to achieve a reduction in the population growth rate In addition the government will undertake research to discover parents' reasons for desiring large families this is necessary if efforts to persuade people to have fewer children are to be effective " Financial assistance has been provided by the UN Fund for Population Activities, US Agency for International Development, Danish International Development Agency, and International Planned Parenthood Federation, which established a subsidiary there in 1971
Cameroon	6 5	C	-	The government considers the country to be underpopulated Family planning is not promoted, however, as a health measure, the government is prepared to allow health facilities and personnel to provide advice and services
Ethiopia	28 5	C	-	The government does not support family planning but permits family planning services to be offered in some areas in connection with maternal and child health programs and clinics A local Family Guidance Association offers family planning services
Gambia	0 53	B	1969	At a conference on population and family planning in December 1974, the minister of health expressed great concern over the country's infant mortality and morbidity rates, and stated that family planning is an important element in the country's development The private Family Planning Association is permitted to use Ministry of Health clinics and personnel in providing family planning services Also, contraceptives are imported duty free
Ghana	9 6	A	1969	The 1973-78 Five-Year Plan stipulates a target to reduce the population growth rate from about 3 9 percent in 1970 to 1 75 percent by 2000 The National Family Planning Programme uses existing facilities and personnel in both the public and private sectors, with the planning, coordination, and funding roles assigned to the Ministry of Economic Planning Family planning information and services are available to all, regardless of age, number of living children, or ability to pay In 1974, the program extended the scope of its commercial distribution of contraceptives by involving commercial houses in addition to the Ghana National Trading Company, which hitherto had been the program's sole commercial agent

(Continued)

TABLE 3 Continued

Country	1976 Population (in millions, est)	Government Position: A, B, or C (see Notes)	Government Position: Year Adopted	Comment
Ivory Coast	6 7	C	-	The Ivory Coast has no organized family planning activities and tends to view the population growth rate as acceptable
Kenya	13 8	A	1966	The demographic target set in the Five-Year Development Plan, 1974-78, is to reduce the population growth rate from an estimated 3 5 percent to 3 25 percent at the end of the plan period, "with a view to creating a better balance between population growth and economic development " Long-range targets are to decrease the growth rate to 3 percent by 1980 and to 2 8 percent by 2000 The program operates under the Ministry of Health through the national health network Clinics offering IUDs and oral contraceptives free of charge are set up wherever professional personnel are available The government subsidizes private clinics that offer free conventional contraceptives The Family Planning Association is responsible for education and motivation In 1976 the program trained and deployed 156 family health field-educators, increased the number of service delivery points, and established a contraceptive logistics monitoring system
Lesotho	1	B	1974	In 1974 a major change occurred in the government's attitude toward family planning, following the recommendations of a national population commission In his inaugural address to the National Population Symposium in June 1974, the prime minister stated, "There are signs that the population factor could be one of these constraints to development " At the same time, the government adopted a position to support family planning services in the context of maternal and child health, and discussed with the International Planned Parenthood Federation and other organizations the means to integrate family life education into an agricultural development program in a region having a population of 94,000
Liberia	1 7	B	1973	In a statement released on 1 May 1973, President W R Tolbert, Jr stated, "The wholesome functioning society envisages an integrated development plan of qualitative improvement in the standard of living for all our people This involves maternal and child health and family planning Responsible parenthood is just as important as responsible fiscal policy We owe it to ourselves and to posterity to take advantage of modern technology wherever it is available "
Madagascar, Democratic Republic of	7 5	C	-	Although the government tends to be pronatalist, it has recently moved to include family planning services in its maternal and child health services It has also created a National Council on Population and a director of population in the Ministry of Social Affairs
Malawi	5 2	C	-	The government is basically pronatalist and prohibits wide dissemination of family planning services and information
Mali	5 6	B	1972	Mali was one of the first Francophone countries in sub-Saharan Africa to adopt a policy to support family planning for spacing and maternal and child health reasons In order to establish the program, in 1972 Mali repealed the French law of

(Continued)

TABLE 3 Continued

Country	1976 Population (in millions, est)	Government Position: A, B, or C (see Notes)	Government Position: Year Adopted	Comments
Mali (continued)				1920 prohibiting the advertising, sale, or distribution of contraceptives Demonstration centers in both urban and rural locations are under way and the government anticipates that services will be available in about 20 health centers by 1978
Mauritius	0 87	A	1965	As expressed in the Four-Year Development Plan, government policy is to reduce the gross reproduction rate from 1 92 in 1969 to 1 20 between 1980 and 1985 This represents a crude birth rate of 22 5 in the early 1980s In 1972 the government assumed full responsibility for family planning and maternal and child health However, the Family Planning Association continues to run two clinics and to promote education and motivation, while Action Familiale continues to receive a government grant to provide methods acceptable to the Catholic Church
Mozambique	9 4	C	-	
Nigeria	65	B	1970	To pursue the objective of integrating family planning activities into a national health and welfare program, the government established a National Population Council in 1975 The council's functions are (a) to advise on national population policy and to coordinate its implementation, and (b) to secure internal and external assistance for family planning and channel such assistance to appropriate organizations in the country The Second National Development Plan, 1970-74, called for "Government to encourage the citizens to develop a balanced view of the opportunities for individual family planning on a voluntary basis "
Rhodesia (Zimbabwe)	6 5	B	1968	The Ministry of Health, the State Lottery, and 22 local authorities contribute financial support to the Family Planning Association The association is enlisting community support and is receiving financial aid from 15 major commercial and industrial organizations The association lists 620 outlets where contraceptives are available, but this number is fluid The association provides free condoms through its Educational Force
Senegal	5 1	A	1976	On 27 December 1976 President Leopold Sedar Senghor recommended in his report to the Party Congress the adoption of a family planning program capable of limiting demographic growth Initially the program will be limited to the cities The government solicited support from USAID and the Pathfinder Fund and is negotiating with UNFPA for technical and financial cooperation Fear of religious opposition continues to mute support for family planning, but the program now has Party Congress approval for activities within the country's religious framework
South Africa	25 7	B	1966	The government has been supporting family planning activities since 1966, when it began to reimburse clinics for family planning as well as for other health services The private National Council for Maternal and Child Welfare is an affiliate of the International Planned Parenthood Federation From a laissez faire

(Continued)

TABLE 3 Continued

Country	1976 Population (in millions, est)	Government Position: A, B, or C (see Notes)	Government Position: Year Adopted	Comment
South Africa (continued)				attitude, the government is moving toward more open support of family planning In 1973, it approved a plan for free distribution of oral contraceptives
Tanzania	15 7	B	1970	The government encourages the activities of the Tanzania Family Planning Association, of which the minister of labour and social welfare is chairman The Ministry of Health plans to provide family planning services as part of its maternal and child health program In his address on 16 September 1973 to the sixteenth biennial conference of TANU (the country's political party), President Nyerere stated that "whatever we produce has to be divided between an increasing number of people every year For the first ten years of their life, at the very least, children eat without producing " The government abolished tax allowances for children and, as an incentive to birth spacing, now limits paid maternity leave to once in three years
Togo	2 3	B	1975	Family planning will be integrated into the government maternal and child health network as part of a national family welfare program The private Family Planning Association, established in 1975, has been assigned a significant role in the government program
Uganda	11 8	B	1972	The Third Five-Year Plan, 1972-77, discusses the problems created by the high rate of population growth, estimated at the time the plan was written to be about 3 2 percent per year In consequence of this, the government provides financial support to the private Family Planning Association However, major reductions in the birth rate are not expected with the limited program envisioned by the plan
Upper Volta	6 2	C		The government does not support family planning, and contraceptives are difficult to obtain There is no mention of either population growth or family planning in the 1972-76 development plan
Zaire	25 2	B	1973	In his official annual address on 5 December 1972, President Mobutu Sese Seko expressed interest in limiting births to "desirable births " In the opening speech to the seminar on "maternity based desirable births" held in Kinshasa in March 1974, the minister of health stated, "We believe that a moderate demographic growth limited to desired births is a part of the basic equilibrium of a modern country in full development " A governmental agency, Fonds Medical de Coordination (FOMECO), has initiated a family planning clinic in Kinshasa and is training medical and paramedical personnel in contraceptive techniques In 1976 the government established a National Committee for Desirable Births to improve child health and provide anti-sterility services
Zambia	5 1	B	1974	Although the government still hesitates to provide family planning services, these will nevertheless be made available for child-spacing purposes The Family Planning and Welfare Association of Zambia, an IPPF affiliate, provides free contraceptives Several donors, including US Agency for International Development, the

(Continued)

TABLE 3 Continued

Country	1976 Population (in millions, est)	Government Position: A, B, or C (see Notes)	Government Position: Year Adopted	Comment
Zambia (continued)				Pathfinder Fund, and the United Nations Fund for Population Activities, have provided support for such various activities as pilot family planning projects and assessment and study of demographic variables

NOTE Only countries that are characterized by government positions A or B or that are in residual category C and have an estimated population of 5 million or more are included in this table

A = official policy to reduce the population growth rate In addition to supporting family planning to implement this policy, countries in this category also support family planning for reasons of health and as a human right

B = official support of family planning activities for other than demographic reasons Countries in this category usually support family planning for reasons of health and as a human right, but any antinatalist effect is a by-product, not an objective

C = residual category Countries in this category neither have a policy to reduce the population growth rate nor support family planning programs for any reason, demographic or otherwise The list therefore includes countries that are neutral toward their population growth rate as well as those that are pronatalist, but the distinction between "neutral" and "pronatalist" is considered too conjectural to warrant classification by separate categories

SOURCE D Nortman and E Hofstatter, Population and Family Planning Programs, ninth edition New York Population Council, 1978

countries that officially support family planning activities for reasons of health and as a human right (classified "B" in the table), Ethiopia permits family planning services to be offered and Madagascar has announced it will include family planning in maternal and child health services However, in many of these countries family planning services are not widely available and the effectiveness of programs has not been assessed.

Most of the countries that have not indicated public support for family planning programs are francophone According to Gauthier and Brown (1975), the francophone countries of Sub-Saharan Africa can be grouped together despite their considerable geographic and social diversity because they have a great deal in common regarding population policy and family planning.

> None of them 3/ has a policy aimed at reducing the rate of population growth. In general, these countries have been resistant to outside influences, particularly from the Anglophone world, tending to relate potential for social and economic development to a prior or concomitant decrease in fertility.

The government of Cameroon considers the country underpopulated and does not plan to promote family planning In Upper Volta, the government does not support family planning, probably because high fertility is not perceived as a problem Chad and Gabon have punitive laws under which advertising or even describing contraceptive devices is punishable with gaol sentences Despite the problem of infertility and sub-fertility in parts of tropical Africa, there are no known official policies on this issue.

With reference to the literature already reviewed, the policy options that emerge include intensified efforts to promote social and economic development and family planning programs Specifically, increasing levels of educational attainment, especially among women, and the growing involvement of women in urban-type occupations will tend to promote smaller families through increased age at marriage, conflict of roles between working and reproducing, and more favorable attitudes toward the use of contraception Efforts at social and economic transformation are to be complemented by provision of family planning services so as to meet the need of couples who desire to limit the size of their family

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3 Gambia, Mali, Senegal, Togo, and Zaire now support family planning for non-demographic reasons

INTERNAL MIGRATION AND URBANIZATION

It is perhaps in the area of internal migration and urbanization that the greatest attempts have been made to investigate the interrelationship between population parameters and certain development variables The period prior to 1965 was marked by concern with seasonal or short-term labor migration, especially of the rural-rural type in West Africa and of the rural-to-mining areas type in middle-eastern and Southern Africa The causes of such rhythmic (or circular) movements of individuals, giving rise to rather complex flow patterns, provided the opportunity for numerous conceptual adventures Apart from attempts at imposing a simplistic push-pull explanation on the phenomenon, there were more elaborate efforts such as that by Mitchell (1961a and b), who decried both single-factor explanations as well as the listing of all possible motivations Mitchell then proceeded to emphasize the need to link together and relate in a logical framework the multiple causes through a classificatory schema This schema has as its major categories "the nexus of centrifugal tendencies" and "the nexus of centripetal tendencies " Both of these are further sub-divided by social, psychological, and economic factors Most of these earlier studies lacked much intellectual rigor, partly because the data were poor but also because the phenomenon was then more a matter of academic curiosity than of serious governmental concern

The situation changed radically with political independence in most African countries The effort at social development in many of these countries, especially through expanding educational opportunities, gave rise to substantial rural-to-urban migration and created for the first time a highly visible mass of unemployed youths The problem became a challenge to social scientists, particularly because it had immediate policy relevance Not unexpectedly, therefore, rural-urban migration became an area of considerable interest, not only in the fields of demography, sociology, and geography, but also in economics, which is perhaps the most policy-oriented of the social sciences Initially, most of these studies were primarily descriptive, although they were based on censuses or surveys They addressed the broad questions of who migrates, why, and with what economic effects both on the source and destination areas They emphasized, for instance, that for most countries of the region, migrants tend to be young people, with a growing preponderance of young school leavers and a tendency to male dominance (Collins 1952, Caldwell, 1969a, Elkan, 1967, Ominde, 1965, Rempel, 1971) While the reasons for migration are numerous and may include the desire to escape from the social restraints of small communities or to join one's relatives or to improve one's skills, the primary motivation is economic (Beals et al , 1967, Caldwell, 1968a, Hart, 1974) The economic consequences were often assumed to be beneficial to both source and destination areas, although the social disintegrative effects on the rural source regions were also recognized (Dorjahn, 1971, Cougler, 1968, Skinner, 1965) It was assumed, in particular, that cash remittances to rural relatives from urban migrants represented net positive gains to the source region (Adepoju, 1974) Essang and Mabawonku

(1974) showed, however, that total rural out-remittances plus the cost of educating the migrant in the rural area greatly outweighs the sum of in-remittances Similarly, the highly visible problem of urban unemployment began to cast serious doubts on the social benefit of migration at the place of destination (Gutkind, 1969, Collier and Remple, 1973, Spengler, 1969)

The path-breaking study in Africa in which the relationship between migration and development variables were tested in an explicit manner was that by Todaro (1968 and 1969), which argued that the spatial movement of labor over time between a rural and an urban sector was primarily a function of the differential in expected income between these two sectors His model has four important features First, it is based on the assumption that migration is stimulated primarily by rational economic considerations of relative benefits and costs of both a financial and a psychological nature Second, the decision to migrate depends on "expected" rather than actual urban-rural wage differentials The former is determined by the interaction of two variables, the actual urban-rural wage differential and the probability of successfully obtaining employment in the urban modern sector Third, the probability of obtaining an urban job is inversely related to the urban unemployment rate Finally, because migration rates are rational outcomes of a situation of continued positive urban-rural expected income differentials, the phenomenon of persistent high rates of urban unemployment represents a logical and inevitable consequence of the serious imbalances in economic opportunities between urban and rural areas

Empirical data were collected in Kenya to test the various hypotheses on the relation between migration and unemployment Moreover, attempts were then made to indicate the policy implications of the model The latter were elaborately outlined in a later publication (Todaro, 1971) and ranged from short-term policies such as restrictions on migration, elimination of factor-price distortions, and employment creation by voluntary agreement, to long-term policies such as limiting population growth and generating domestic labor-intensive technological capabilities

There have, of course, been reactions against Todaro's probabilistic expected income approach One particular area to which criticism has been leveled is that which argues that the net flow of migrants into urban centers is dependent on urban demand for labor and that "there is no inherent tendency for rural workers to continue to pour into urban areas at such a pace that the unemployment rate becomes ever more serious merely because the wage paid to those fortunate enough to possess a job in the modern sector is higher than that received by the typical rural worker " Frank (1968) calls attention to the fact that the policy implication of this conclusion may be that there is no point in trying to increase urban employment opportunities since "an increase in employment is accompanied by an increase in unemployment "

A more fundamental criticism is provided by Godfrey (1973), who used Ghanaian data to show that changes in the rate of net rural-urban migration do not seem to be consistent with the Todaro hypothesis This, he argues, is because the hypothesis excludes certain important variables, particularly educational change, and mis-specifies the economic variables The mis-specification of the economic variables relates to Todaro's assumption

that what migrants are looking for is a job in the modern sector Work in what is variously called the "low productivity urban sector" or the "informal sector" is implicitly regarded as akin to open unemployment If, however, most migrants are thinking merely in terms of picking up what they can in the latter sector, then net migration will have to be related to what is going on in the informal urban economic sector as well as to earnings and employment possibilities in the modern sector Todaro, however, does not wholly accept this criticism, although he admits (1972) that there is some ambiguity in his reference to the "informal" sector and that he failed to draw out fully the implications of informal sector activities

With respect to the variables excluded, these include the gap in social and infrastructural assets between urban and rural areas, the number of kinsmen already resident in urban areas, changes in attitudes explainable purely in sociological and/or political terms (that is, not related to changes in any of the other variables in the function), and an education variable The education variable, in particular, needs careful definition Caldwell (1967b), for instance, argued that an administration could, with a time-lag, substantially influence the volume of rural-urban migration by providing more or fewer educational facilities He presents data from a 1963 survey on unemployment among school-leavers in Accra, Ghana, who, when asked why they had migrated to an urban area, replied that they had been to school, as if this provided a full explanation, which no sensible person would contest He also found that 48 percent of those with middle-school education expected to remain permanently in rural areas, compared with 76 percent of those with no schooling In a similar study of a "non-rural village," Maragoli, near Kisumu, Kenya with a high pressure of population on the land, Moock (1972) remarked on the desperation with which parents and children look to education as the only means to a satisfactory future.

Godfrey, however, emphasizes that the relationship between the volume of rural-urban migration and the provision of educational facilities should not be regarded as simple and direct. Such a simple direct relationship might be expected to hold only if we accept the so-called "white-collar hypothesis," which states that educated people migrate because they have been taught to despise their rural environment and to aspire to urban white-collar jobs. The work of scholars such as Foster (1965), McQueen (1965), and Subrahmanya and Scott (1968) would seem to undermine the validity of this hypothesis and tend to indicate that it overestimates the extent to which people's attitudes are shaped by what they are taught in school Moreover, Todaro (1969) himself had argued that education can be incorporated into his framework without defining it as a separate variable on the grounds that the propensity to migrate, the average urban income earned by a migrant, and the probability of securing a salaried urban job are all higher, the higher the level of educational achievement

However, Godfrey argues that education can be shown to have an effect on migration quite separate from its influence on expected income This would make Todaro's correlation inadequate in explaining changes in the rate of migration over time This separate effect exists because, irrespective of the state of the urban labor market, a school-leaver, having acquired a certain level of education, may feel it necessary to leave the village because his education differentiates him from his age-group to the extent that

he feels himself to be in the "migrant" category The critical function here is the extent of differentiation, so that, as enrollment ratios rise in a community, so also does the level of education that performs this function Hence, the effect of a given change in the expected income differential between urban and rural areas would more realistically depend on the size and nature of any educational change that might have also occurred In other words, the value of a particular level of educational achievement as a migration factor diminishes as the number of persons acquiring that level increases

Apart from this contextual criticism of the Todaro model, its probabilistic framework has also been objected to on more fundamental grounds This derives from the implicit definition in the model of the decision-maker in the migration process as an economic man who will act consistently at different points in time On this issue, Godfrey suggests that a distinction must be made between at least two decisions made at different points in time--the initial decision whether or not to migrate and the latter decision, faced after a period of unemployment in the city, whether or not to return to the place of origin According to this view, these two decisions are made by two different people The initial decision to migrate, say by a young school-leaver, is made under the influence of an "employment illusion" that encourages a vast over-estimate of the probability of getting a job The later decision is made by a young man who has exhausted his fund of beneficent relatives and stands alone, unemployed, frustrated, and alienated However, as Johnson (1971) emphasized, this later decision must be assessed within a framework in which migration decisions are seen not as once-in-a-lifetime decisions (or, as he puts it, not as a decision whether to move from Leeds to South Africa) Strong links continue to be maintained between migrants and their home regions, and changes in the rate of aggregate net migration conceal constant backward and forward movements by individuals This tendency thus detracts from the realism underlying the migration function in the Todaro model While the model may be useful in looking at the initial decision whether or not to migrate, it does not help explain change in net migration resulting from the kind of backward and forward movement described above Indeed, the result of trying to apply such analysis would probably be either a huge coefficient for the trend variable or a large residual Godfrey therefore argues that instead of an aggregative, probabilistic approach, an alternative strategy based on micro-studies of particular villages or groups within villages over time should be explored with the aim not so much of statistically "explaining" as of understanding what is going on Moreover, he stresses that much more caution should be exercised in making predictions and policy recommendations than has been shown previously

In spite of these criticisms, most of the more recent major studies of the relationship between internal migration and development have tended to be based on testing, extending or adapting the Todaro model Barnum and Sabot's (1975) study indicated that a given percentage increase in urban wages will induce twice as much rural-urban migration as the same percentage increase in employment This tends to support Todaro's hypothesis of the importance of "expected" rather than actual wage in the decision to migrate.

With regard to the problem of migration and urban unemployment, the the central issue here is the question of how the rate of migration or the "elasticity" of migration is affected by the probabilities of securing urban employment Todaro had emphasized the paradoxical finding of his model that an autonomous increase in urban job creation designed to lower both the level and the rate of urban unemployment may in fact lead to the opposite results increased level and increased rate of urban unemployment He had also shown that this outcome depended on two "threshold" values of the elasticities of migration with respect to urban job probabilities--a threshold level related to the amount of unemployment and another related to the rate of urban unemployment Moreover, this outcome can be expected whenever the estimated migration-job probability elasticity is higher than either or both of these threshold values

This finding seemed to have been confirmed in the Tanzania case (Barnum and Sabot, 1975), where migration elasticity with respect to job probabilities was on the order of +0 65 compared to the "threshold" level of +0 25 calculated by Todaro (1976b) In their Sierra Leone study, Byerlee, Tommy, and Fatoo (1976) did not find such a relationship, however What they found was that urban unemployment had relatively little effect on the rate of migration as measured by both the statistical significance of the coefficient on the unemployment variable (which was low) and the elasticity of migration with respect to urban unemployment One possible explanation for this contrary finding is that econometric analysis of cross sectional data is limited in its ability to isolate the effect of unemployment, which is correlated with other variables, particularly urban size and urban wages A more plausible reason, they argue, involves the method of computing expected wages in the Todaro model, where it is assumed that unemployment results in zero income Such an assumption ignores the considerable support the urban unemployed continue to receive while searching for a job and the fact that educated migrants in particular live in households with above-average incomes Hence, migrants may not regard unemployment as a severe hardship, If this is true, they will not be responsive to unemployment rates Byerlee, Tommy, and Fatoo therefore conclude that this phenomenon requires further study to be more fully understood, especially through further analysis of the motives for the extensive intra-urban income transfers between working and non-working migrants

In a recent publication Todaro (1976c) identifies other priority areas needing further research attention These include the relationship between migration rates on the one hand and job probabilities and expected incomes on the other, the direct and indirect effects of urban and rural real incomes and job opportunities on the magnitude of migration and urban unemployment, the relationship between migration and income distribution on the one hand and migration and fertility on the other, the relationship between education and migration, and the short- and long-term social and economic impact of migration on source and destination areas

In spite of the growing concern with rural-urban migration in social science research in Africa, the continent remains the least urbanized in the world In 1920 about 14 percent of the world population lived in cities of 20,000 or more inhabitants, whereas the proportion in Africa was only 5 percent Not only was Africa's concentration in such cities below the

world average, the proportion was still low when compared with Asia and Latin America, all regions which are lowest on the scale of urbanization in the world While the world average rose to about 25 percent in 1960, the proportion of the population in Africa living in cities of 20,000 or more inhabitants was barely half of that If we consider cities of 100,000 or more inhabitants, virtually the same pattern is revealed

Within the continent of Africa itself, tropical Africa is the least urbanized On the basis of national definitions (which vary widely from one country to another), by 1967 only 11 percent of the population of tropical Africa was defined as urban With its long heritage of urban living, North Africa was 32 2 percent urbanized, while Southern Africa, with its highly industrialized component, the Republic of South Africa, had 45 percent of its population living in "urban places " According to Kingsley Davis, in 1970 Southern Africa, with 50 4 percent urban population, was easily the most urbanized country in Sub-Saharan Africa, followed by West Africa, 19 7 percent, Middle Africa, 15 4 percent, and East Africa, 9 9 percent These estimates are based on national definitions The lack of standardization makes regional comparison difficult Based on a standard definition of percentage of population in cities of 100,000 or more, in 1970 Southern Africa was 29 percent urban, West Africa 7 percent, Middle Africa 6 percent, and East Africa 5 percent

PRE-COLONIAL URBANIZATION

To be meaningful, an analysis of the urban condition in Sub-Saharan Africa must distinguish between the "old" and the "new" forms of cities This distinction corresponds to the pre-colonial and the twentieth century urban patterns Although the region has no reputation for population concentration to any significant extent before the advent of European administration and international commerce, this is not to say that it was devoid of agglomerations of considerable size Nor can we say that such cities as existed before colonization were not functionally significant Despite the fragmentary nature of the data about these old cities and their limited socioeconomic significance, it is believed that a consideration of the urban condition in the past will help to prevent the researcher from forming an unduly narrow conception of the subject matter

Moreover, it helps in understanding the character and functions of African cities today, especially since the size of a city in this part of the world is not necessarily an indicator of its degree of "urbanness " The foreign observer who wonders why, for instance, two cities in the same country and century, having virtually the same population size, differ so markedly in their urban attributes needs only to make the necessary distinction between the "old" city, structured on the traditional pattern, and the "new" city, developed only recently While the one still retains most of its traditional forms, functions, and structure, the other, based on foreign experience, possesses most, if not all, of the features of an "urban place" in the Western sense of the term Indeed, this typology makes the analysis of the past and present role of cities in tropical Africa more meaningful and may also aid in a speculation into the future

Medieval urbanism can be most profitably studied if a sound chronology has been established For Sub-Saharan Africa, there is no such reliable chronology, and the scanty archeological findings available do not lead us to any meaningful conclusion. We know, however, that urban places are not an entirely modern development in Africa By 3000 B C some cities (none of which exist today) emerged in parts of North Africa, but among the oldest cities in Africa that still exist today, none is to be found in tropical Africa However, as far back as the tenth century a number of towns emerged in this part of the continent, for instance Kano, Zaria, Katsina, Ife, Iwo, Ilesha, Iseyin, Ede, Ilorin, Ijebu-Ode--all in Nigeria and Timbouctou

The precise dates of emergence of these cities are not known, nor do we have adequate records of their growth and decay before the nineteenth century Available records indicate, however, that by the mid-nineteenth century at least three Yoruba towns in the Western Region of Nigeria contained close to 100,000 inhabitants, and a few others were of considerable size

Older than the "forest cities" of southwestern Nigeria, there were a number of towns in the Sudan Savanna scattered, from east to west, along the 12°N parallel in tropical Africa Unlike the Yoruba towns, not all of these cities were contemporaneous. Such cities included Tekur, Audoghast, Ouatala, Kumbi (which virtually disappeared by the thirteenth century), Timbouctou (otherwise written Timbuctou or Timbuctoo), Tireka, Gao, Takedda, Tadmekka, Agades, and Bilma There is very little information on the size of the population of these older cities, and since most of them have disappeared or, like Timbouctou, declined in importance over the years, it is difficult to attribute to them anything more than their archaeological significance

These old cities arose out of diverse situations The pre-modern cities of the Sudan Savanna emerged as trading centers for the medieval international commerce that was so important between the Mediterranean ports of North Africa and the forest areas south of the Sahara Transportation across the desert was by camel, and the tsetsefly-free belt of the Sudan Savanna marked the southern limit of the caravans trading sophisticated goods of Europe and the Mediterranean region for gold, ivory, and slaves No doubt trade was the impetus for the rise of these medieval cities in the Sudan. Thus it is easy to see why, after the European penetration of West Africa from the coast following colonization and the substitution of oceanic transportation for the trans-Saharan caravans, most of the cities declined in importance and a few others disappeared.

The Yoruba towns in southwestern Nigeria emerged largely as a form of colonial settlement among the original inhabitants. In an attempt to dominate the weaker, scattered people, the immigrant group forced numerous hamlets and villages to agglomerate For example, historical records show that when the present city of Oyo was founded, several of the surrounding towns and villages within 10 to 20 miles of the new city were depopulated and their inhabitants forced to move into the new town

When one examines the circumstances of the process of urbanization in the Sudan and the forest areas of West Africa and the evidence of trade and forced concentrations, there is an apparent missing link. How were the city dwellers maintained? The answer to this question is provided by a functional analysis

of these pre-colonial cities The agglomeration of the population into towns in both the forest areas and the Savanna was based on trade, and the trade itself was based on agricultural and craft production, which served as the major elements in the survival of the cities

There is every reason to believe also that many of the exchanges that took place between the forest inhabitants and the grassland Sudanese consisted of agricultural products and caravan-imported European goods This would not have been possible without the strong administrative power possessed by the city authorities

Given the limitations of transportation, the level of agricultural technology, and the fact that these new forms of settlement had to endure the vagaries of persistent inter-tribal wars, it is not surprising that these cities were characterized (until the advent of colonialism) by locational instability and absolute loss of population Of the numerous towns that emerged in the Sudan belt between the tenth and the eighteenth centuries, only a few have survived until today. In the forest region some of the cities were plagued by other hazards For instance, the old Oyo changed location, a few other towns abandoned their up-hill defensive locations, and others moved to the plains following a restoration of peace

CITIES IN MODERN SUB-SAHARAN AFRICA

The conditions that have made for a much more widespread and sustained growth of towns in Africa South of the Sahara since the beginning of the twentieth century are generally associated with the advent of colonial administration Such conditions include the establishment of peaceful government, the introduction of a money economy, with its implications for internal as well as international commerce, and the general improvement of the economy resulting from increased agricultural production and industrial development However, European influence in this part of Africa goes back to the sixteenth century, when French, Danish, Dutch, and British explorers established small coastal ports, trading posts, or way stations along the coast of tropical Africa Such coastal towns include St Louis and Goree in Senegal, Conakry in Guinea, Sekondi, Cape Coast and Accra in Ghana, and Calabar in Nigeria Many of these settlements could hardly be called towns in the modern sense of the term since their population was usually small and fluctuated widely from period to period They could not maintain a sustained growth to large numbers as long as they remained virtually isolated from the hinterland They had to await further development of transportation and increased agricultural production before the benefits of the hinterland manifested themselves in urban development In parts of Middle and East Africa, such a development had to await the discovery of mineral products

The need to establish centers of administration to work minerals led to the growth of towns throughout Sub-Saharan Africa Wherever traditional agglomerations existed, the colonial administration capitalized on them, linking such cities with the interior by roads and railways Important mineral fields became nodal points of growth the rise of Kumasi (gold region of Ghana), Jos and Enugu in Nigeria (centers of tin and coal, respectively), and numerous other towns, especially in the copper and diamond fields of Katanga in Zaire,

are a testimony to the impact of minerals on the growth of new towns in tropical Africa Some of the coastal towns of East Africa (Mombasa, Zanzibar, Dar es Salaam, to mention a few) were initially neither connected with colonial administration nor mineral production, rather, they had a long history of settlement by Arab immigrants With their largely mercantile origins as ports, they now contain a mixed population of Arabs, Asians, Africans, and Europeans

THE GROWTH OF CITIES

One fact of demographic significance is the remarkable growth of the modern cities of tropical Africa in the last two decades In Europe and North America, the growth of cities was associated with complementary developments in agriculture and industrial production--with the advent of mechanized agriculture, which generated surplus labor, which migrated into the cities to meet the rising demand for labor in the industrial sector In tropical Africa the situation is different. In the first place, the European model of the agrarian revolution is still to come Secondly, the movement of population into the towns has little in common with the economic principle of balanced supply and demand What we find, in fact, is that initially there was a dearth of labor in the new manufacturing centers and that it took a fairly long period of persuasive efforts and promises of compensation to attract rural agricultural workers into the cities.

> In spite of the conspicuous poverty of the tribal Africans and the apparent abundance of men with no calls on their time, the entrepreneur has not always been able to count on a steady and sufficient flow of labour for his needs Wage labour was foreign to the tribesmen of the late nineteenth century and savoured to him somewhat of slavery (Mitchell, 1961b)

Now the suspicions surrounding wage labor seem to have been removed, but still the motivations of migrants to the urban centers in tropical Africa differ somewhat from those found in the European experience Since the relatively few urban centers contain most, if not all, of the benefits of modern living (water supply, drainage, sewerage and sanitation, schools, hospitals, shops, and recreational facilities), the desire to partake of such opportunities is a potent factor in rural-urban migration today The prospect of paid employment offered by many cities is another magnet that draws the population to the cities of Sub-Saharan Africa As a consequence, of course, many of these towns suffer from mass unemployment For example, according to an official report (1952) on Tanganyika

> . there is a perceptible drift of Africans from the country districts to the towns, in many cases the numbers involved bearing no relation to the industrial or commercial opportunities offered by the town

Another consequence of this "perceptible drift" to the towns of tropical Africa is the remarkable growth rates of these towns The annual percentage growth rates of cities of over 20,000 inhabitants are higher in Africa than the world average Whereas the world average growth rate for such cities was 1 3 percent for the 1940-1950 decade, increasing to 1.8 percent during the 1950-1960

decade, the corresponding figures for Africa are 3 0 and 3 1 percent Other estimates put the growth rate between 3 9 and 5 4 percent Comparable figures for the developed countries are 0 8 and 1 4 percent, and for the developing countries an average of 2 8 percent throughout the two decades

The location of cities in Africa presents an interesting pattern A substantial majority of the major tropical African cities are situated on the coast, and for some countries most of the important towns are to be found within 50 miles from the ocean Except in Zaire and, of course, the land-locked states, major cities are scanty in the heartland of tropical Africa As already indicated, the Sudan Savanna region of West Africa marks another belt of towns, a manifestation of geographical inertia

Little is known about the age and sex structure of the urban population of tropical Africa before the twentieth century More reliable information for some cities in this region is now available on socio-demographic features as well as vital statistics Serious concern with urban demographic conditions is, however, only in its initial phase, a fact strongly underlined by the publication of a special issue of African Urban Notes (Spring 1971) on African urban demography Most of the articles in this volume saw their role as largely exploratory or, as Henri Knoop, the guest editor of the issue, put it, "an experiment intended to attract the readers' attention to the potentialities of the demographic approach to urbanism."

Given the rate and circumstances of growth of some of these cities, it is not surprising that there is a relatively heavy concentration of the population in the younger adult age groups. Since young adults tend to predominate among migrants, the influx of rural population into the towns has inevitably generated the type of unbalanced age structure illustrated by Stanleyville The preponderance of males over females in almost all age groups is also indicative of the nature of migration into these towns An unbalanced sex ratio is perhaps one of the most characteristic features of the demography of African cities Explanations offered for this phenomenon vary considerably Caldwell (1968a) relates it to the situation in the home regions of migrants and emphasizes tradition, distance, and social attitudes in these areas According to him, "both distance and social change affect the sex differential in the stream the longer the journey or the more traditional the society, the higher in general are the migrant sex ratios But the ethnic differences that have always prevailed in the attitude toward family migration are still factors in the sex composition of the migrant stream" (p 21)

In challenging this position, Gugler (1971) argues strongly in favor of an economic interpretation of the phenomenon which, in his opinion, is mainly rooted in the lack of urban employment opportunities for women and the inability of most urban workers to earn the minimum income required to support a family in town The exceptions to the rule of male preponderance in towns, he further argues, provide striking evidence for an economic interpretation Di Giacomo and Stanley (1960) found that women outnumbered men in Addis Ababa This, in part, was explained by the migratory movement to the city of women who were attracted by the earning opportunities in liquor-selling, traditionally the preserve of women They further observed an excess of women over men as a characteristic of other pre-industrial African cities such as Katsina, Sokoto, Abeokuta, and Ilesha in Nigeria A change from female to male

predominance occurred in Ibadan and Kano between 1931 and 1952

High mortality and fertility are representative of the urban population in most parts of tropical Africa The generally high vital rates may be taken as a reflection of the recency of urban growth in this part of the world The extent to which high birth rates are a result of more complete registration is debatable, but since the growth of cities is generally negatively correlated with levels of fertility, we may accept this hypothesis as plausible It is also postulated that the large proportion of farm workers and rural immigrants who make up most urban populations in tropical Africa have not yet changed their traditional, "rural" patterns of fertility behavior

Pool (1971) suggests that the diverse patterns of fertility differentials between rural and urban areas may be related to different stages of urban growth At an early stage of urbanization (and remembering that many African cities are "artificial," being administrative centers located where no previous urban center existed), urban fertility could be lower than rural because of the age-sex structure of in-migration and the type of female migrant attracted to the urban area (in Niamey, Niger, levels of sterility are very high among older women). Later, with family migration, the age-sex structure may become more "normal" or more closely approximate to the rural, and urban fertility could equal or exceed rural By analogy, one could draw on the experience of Sudan, where the fertility rates of sedentarized nomads were found to be higher than those of persons who remained nomads (Henin, 1969) Finally, with "modernization" resulting from factors such as the increase in the availability of schooling, urban fertility may once again become lower than rural

With respect to mortality, declining levels (crude as well as infant) in urban areas can readily be explained by the availability and use of health facilities

Functionally, the old cities are much more diversified than they were before the modern urban period The indigenous towns have multiple functions ranging from political administration, commercial activities, and modern industrial manufacturing to craft production Oddly enough, the traditional economy remains important, and that is why most of the old cities continue to contain a substantial proportion of agricultural workers Looking at the occupational returns in the Nigerian census of 1952, the paramount importance of traditional agricultural occupations in the indigenous cities is obvious Mitchell's sample of urban occupations (1952) confirms this fact Eruwa, a town of 8,154, had 92 percent of its working males engaged in agriculture, while some other selected towns of over 100,000 inhabitants had between 60 and 70 percent of their working males in agriculture And Ibadan, the largest indigenous city in tropical Africa (400,000 inhabitants in 1952), had 35 percent of its working males in agricultural functions

The new towns, on the other hand, contain fewer farm workers and tend to be rather specialized. The larger cities, especially the national capitals, tend to be more complex, combining political functions of central administration with commerce, transportation and modern industrial manufacturing The relative concentration of urban population and urban activities in these "primate cities" in tropical Africa is very striking For instance, Monrovia, the

capital of Liberia, had only 81,000 inhabitants in 1962, but accounted for 64 8 percent of the total urban population of the country It is the principal seaport and has the only airport in the country, is the focal point for the country's network of roads and railways, and is the location of the principal manufacturing industries as well as government establishments What is true of Monrovia is applicable to almost all the capital cities of tropical Africa Just as Monrovia dominates most of the urban functions in Liberia, so also does Lagos in Nigeria, Accra in Ghana, Kampala in Uganda, Kinshasa in Zaire, and so on. These political capitals have become economic capitals to a large extent Commenting on this phenomenon, Hance (1970) suggests that this tendency toward high concentration of urban activities in the primate cities is probably a sign of the early stages of urbanization and of development in general in many countries

In a study of Ghana, one feature of importance that emerged is the presence of "functionally similar" centers, which has been taken to imply that the level of economic development is still too low to permit effective urban specialization Yet some towns specialize rather narrowly. For instance, Jos in Nigeria is essentially a mining town. As Kay's (1967) study of Zambian towns indicates, out of the five "mining towns" studied, 62 percent of employed Africans and 56 percent of employed Europeans worked in the mining industry

There is little doubt that the relatively few urban centers that have developed in tropical Africa will continue to serve as the centers of social, economic, and political development The cities will continue to attract people from the countryside as long as they constitute the centers of education, industrial employment, commercial activities, and other associated benefits of modern urban living. The dangers of over-concentration of economic activities in the primate cities, with its implications of unequal regional development, have been noted in the literature Most of these cities harbor a large number of jobless persons who live in unwholesome environments, making social conditions in these cities deplorable. It is also known that the urban centers, especially the primate cities, are in almost all cases centers of political agitation, crime, and squalor Yet even so they seem to the majority of migrants to offer better opportunities for modern living than the countryside Unemployment is not a feature only of the cities, rural areas are also characterized by unemployment as well as underemployment.

Programs of urban deconcentration have been advocated However, apart from lack of funds to prosecute such a plan, it seems that from the economic standpoint agglomeration of industrial and commercial activities in a few centers is a sure way to ensure maximum economic benefits under conditions of economic "take off." As for the implied unequal development, we need only to remember that regional development is hardly anywhere equal, since the distribution of resources is not equal. However, for vast territories such as Sudan, Nigeria, and Zaire, one can argue that the development of a few growth points away from the primate cities is in order If urban values are expected to reach the majority of remote rural dwellers in the face of poor communication facilities

So far, urbanism as a way of life has made limited impact on the population of tropical Africa, not only because the sub-continent is predominantly rural, but because the few urban centers are too remote or inaccessible to the vast majority of the rural population

7

INTERNATIONAL MIGRATION

Prior to their political independence, international migration accounted for a much larger share of the population movements of most African countries. These migrations were predominantly short- to medium-term labor movements, generally from areas of dense population or inadequate natural resources to centers where the colonial administration concentrated their major exploitative activities, particularly in mining and plantation development In West Africa, the most notable movements were generally from the Savanna grassland regions, particularly from Upper Volta, Mali, and Niger to the coastal states of Ghana and Ivory Coast A survey of this movement (CTA/CSA, 1961) conducted from April 1958 to March 1959 revealed that some 400,000 to 500,000 persons moved into Ghana and Ivory Coast over the one-year period and that more than 80 percent stayed for less than one year In East Africa, similar movements of migrant workers showed a greater measure of organization, with most migrants being recruited by special agencies from the main source areas in Mozambique, Malawi, Zambia, and Angola to the mining and industrial complexes of the Transvaal in South Africa (Houghton, 1958, Mitchell, 1961b) The recruitment arrangement involved the workers entering into contracts with these agencies, who also undertook their transportation to and from the places of work

The attainment of political independence led to a remarkable diminution of the streams of international migrants and the expulsion of large numbers of them from countries where, in some cases, they had lived the greater part of their adult lives The basic reasons for this reaction against international migration are economic and political The former arises from the mistaken notion that the apparent prosperity of migrants has been achieved at the expense of the indigenes of the country This is the argument put forward in the West African case (Mabogunje, 1972) as well as in the case of the mass expulsion of Asians from Uganda. Political considerations, particularly feelings of national respectability, have been important in East Africa, where checks have been instituted in the source countries rather than in the countries of destination

Studies on the determinants of international migration emphasize overpopulation in certain rural districts, such as the Mossi areas of Upper Volta or large parts of Malawi, underemployment during certain seasons, as in the West African Savanna zone, or the urge to participate in the new money economy or to respond to images of wealth and opportunities to be wealthy in the place of destination (Deniel, 1968)

There is a general tendency to argue that, while the consequences of international migration are positive in economic terms for both the source and destination areas, they either may or do have negative social effects Berg (1965) attempts a benefit-cost analysis of the impact of international migration on the village economy in Upper Volta. On the cost side, he identifies such elements as cost of transport, possible decline in village capital

formation with loss of labor for such activities as well-digging, hut repair and maintenance, path-clearing and road maintenance, reduced availability of tools and consumer durables where village craftsmen have emigrated, reduced output of agricultural produce where the men are absent at the precise time their labor is needed or where migration forces them to cut back on cash-crop production, and decline in leisure time for those who remain behind owing to the necessity to work harder in the absence of migrants The weight of each of these cost elements can be expected to vary from area to area, depending on distance from employment sites, average transport costs, the proportion of men who are seasonally absent, how long they stay away, and the character of the agricultural system

On the benefit side, since migration indicates that returns to labor are higher in the outside economy, and hence that productivity of labor is higher there too, then the level of income and the rate of growth of income of both the outside and village economies will be higher with migration than without it The village economy enjoys a higher level of personal income Its people have better clothes and transportation and probably better food Because of higher incomes, the village can enlarge and enrich some of its stock of durable goods, for example, purchase of plows, rifles, and bicycles would be fewer without migration Even public revenues in the area of origin derive some benefit, because incomes are higher, custom duties on migrants' imports can be significant revenue items, imports increase indirectly through remittances of migrants to families remaining at home and, more indirectly, exports probably increase owing to inflows of new tools and ideas

For the outside economy, international migration brings about invigorating changes along with greater output Cities and towns spring up there, not in the areas of emigration. The wheels of commerce hum, and the web of public and private service expands Tax revenues rise because of increased exports, incomes, and consumption Transport facilities grow and transport costs fall because of greater utilization. The general economic environment becomes more conducive to further growth

The arguments for restraint tend on the whole to be put by anthropologists more sensitive to the social consequences of the long absence of a significant proportion of adult males from their village communities Working among the same Mossi groups as Berg, Skinner (1965) found that international migration was claimed by the people to have given rise to a higher rate of divorce, to the loosening of the traditional sanctions against the disruption of the marriage system, to have exposed many of them to conversion to Islam, and to have weakened the traditional respect for the chieftaincy institutions Similar concern about the socially negative effects of international migration on source areas in East Africa has been expressed by Mead (1942)

8

CONCLUSION

It is clear that academic research into the interrelationships between population dynamics and development in the countries of Africa South of the Sahara is still at a very early stage, with the result that gaps in our knowledge outweigh any generalizations that have been arrived at to date We do not have to look far for the reasons for this state of affairs They include

1 *The limited number of research centers in the area* The number of universities in black Africa is still less than 50, and a good proportion of these were created within the present decade As a result, there is also a shortage of personnel of the right calibre and orientation

2 *The lack of public awareness* In spite of the international interest in population issues, very few black African countries see population as a problem or as a major factor in the determination of their development strategy Given the small size of the population of most of these countries (some 34 out of the 48 have a population of under 5 million), there has been a tendency to watch the annual increase with some degree of quiet satisfaction

3 *The serious lack of adequate data* Even in those countries where the growth rate might have begun to sow the seeds of circumspection with regard to the possible impact of population increase on per capita levels of income or other indicators of individual welfare, the absence of well-documented demonstrative studies has served to keep the situation hidden from direct policy visibility

4 *The direction and emphasis of the research interest of foreign scholars* Instead of complementing the limited activities of over-burdened local scholars, foreign scholars, by their over-emphasis on family planning and fertility control (especially in the 1965-1974 decade) laid open population studies as a whole to negative ideological interpretations, with counterproductive results

As a result of these problems, the basic data infrastructure needed for testing social science research hypotheses concerning the critical interrelationships between development and population dynamics is still lacking in most countries of the region This is why so much attention has been and still is devoted to the measurement of demographic parameters The determinants and consequences of these parameters have received insufficient attention Economists have been very active in the field of rural-urban migration and its effect on unemployment and development There have been some intuitively based assertions concerning the relations between the density of population and levels of development But these assertions still have to be reformulated as research hypotheses and subjected to rigorous empirical tests

In considering the gap in existing knowledge, three areas seem to deserve special attention in the African case. The first is the relation of

population size (and hence growth rate) to level, tempo, and direction of development The question has often been posed as to whether a certain degree of population pressure on resources is a necessary precondition before a community can be induced to engage in serious organizational or technological innovations This is essentially the position of Boserup (1965) However, to accept such a position, it is necessary also to establish the converse--that inadequate population size constitutes a problem for development, at certain levels of societal organization and technological capacity For many African countries, the issues surrounding this particular question would appear to be vital, and their further elaboration, operational definition, and research investigation should prove to be of tremendous policy interest

The second area where the gap in knowledge is of major policy interest concerns the determinants of changes in fertility levels Studies to test the current assumption that modernization, particularly education, is the most critical factor have so far yielded ambiguous results, especially in situations where there is evidence of traditional concern with fertility regulation The circumstances under which such traditional mechanisms are relaxed are certainly worth noting in order to better appreciate the varied dimensions of current situations This means that research in the area of fertility and development must pay more attention to prevailing socio-cultural dispositions than has hitherto been the case. Moreover, it is necessary to consider the fertility relations of these dispositions not in a static, uni-directional sense but within a complex framework of mutual interaction in the process of development Again, we are still far in the African countries from an incisive definition of the nature of those relationships that link fertility change not with modernization per se but with the interaction between the modernization process and the traditional norms, behavior, and value systems of specific cultural groups

Research on population movement, in spite of the works of economists, still remains at a very early stage. Africa has been described as a continent on the move The variety of kinds of movements remains quite impressive Just as in the pre-independence era there was a tendency to over-concentrate on labor migration, in recent years one notices a tendency to over-concentrate on rural-urban migration For most African countries, movements of internal colonization may turn out on investigation to be just as important in magnitude as rural-urban migration, but these have received very little attention Moreover, such movements have more consequences for development than the scanty attention paid to them would suggest, since frequently they involve adaptive relations between ethnic groups as well as between migrants and their new environment Henin's (1969) study of the impact on fertility of the sedentarization of nomads suggests the wide-ranging changes resulting from other forms of population movement besides rural to urban

Other areas deserving more intensive study are mortality and the age-sex structure which, particularly because of the transitional demographic situation of the population, are undergoing change In these areas of study, research hypotheses that reflect the reality of the African situation still have to be formulated In short, what is clear about social science research relevant for population policies in Africa South of the Sahara is that it is still to be conducted How soon and how much the present situation changes will depend on circumstances often beyond the capacity of social scientists in Africa to effectively alter

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